TESLA

SUPERCHARGING STATION

CHESTNUT HILL

MA011_CHESNUT HILL
49 BOYLSTON ST
CHESTNUT HILL, MA 02467

SITE INFORMATION

PROPOSED TESLA EV SITE ADDRESS:
49 BOYLSTON ST., SUITE E.V.,
CHESTNUT HILL, MA 02467 3

EXISTING SITE ADDRESS:
49 BOYLSTON ST
CHESTNUT HILL, MA 02467

PROPERTY OWNER:
CHESTNUT HILL SHOPPING CENTER LLC
33 BOYLSTON STREET
SUITE 3000
CHESTNUT HILL, MA 02467
(617) 232-8900 2

EQUIPMENT SUPPLIER:
TESLA MOTORS, INC.
3500 DEER CREEK RD
PALO ALTO, CA 94304
(650) 681-5000

POWER COMPANY:
EVERSOURCE
SONDY JEAN
(781) 441-8898

COUNTY:
MIDDLESEX

LATITUDE (NAD83):
42° 19' 19.2" N
42.322012°

LONGITUDE (NAD83):
71° 10' 19.0" N
-71.171932°

CONTACT ENGINEER:
RUSSELL POLLOM
(913) 458-6274
POLLOMRE@BV.COM

FLOOD HAZARD AREA NOTE

THIS SITE IS LOCATED IN FLOOD ZONE "X".
NO BASE FLOOD ELEVATION.
AREA DETERMINED TO BE OUTSIDE 500-YEAR FLOOD PLAIN.

CONTRACTOR NOTE

CONTRACTOR SHALL COMPLETE INSTALL PER THE SIGNED AND SEALED SET OF DRAWINGS. ANY NECESSARY DEVIATIONS FROM THE DRAWINGS MUST BE SUBMITTED THROUGH AN RFI REQUEST PROCESS WITH ENGINEERING FOR AN APPROVAL PRIOR TO CONTRACTOR PROCEEDING WITH A DEVIATION OF THE SIGNED AND SEALED SET OF DRAWINGS.

APPLICABLE CODES

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES: 3

2015 INTERNATIONAL BUILDING CODE
MA STATE BUILDING CODE, 9TH EDITION
MA STATE PLUMBING CODE
MA STATE MECHANICAL CODE
MA ELECTRICAL CODE
MA FIRE PREVENTION REGULATIONS

IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL

PROJECT DESCRIPTION

- INSTALL (4) TESLA SUPERCHARGER CABINETS
- INSTALL (8) TESLA CHARGING STATIONS
- INSTALL (1) QED SWITCHBOARD ASSEMBLY
- INSTALL (1) UTILITY TRANSFORMER
- INSTALL (2) PEDESTRIAN LIGHT POLE AND FIXTURES 3

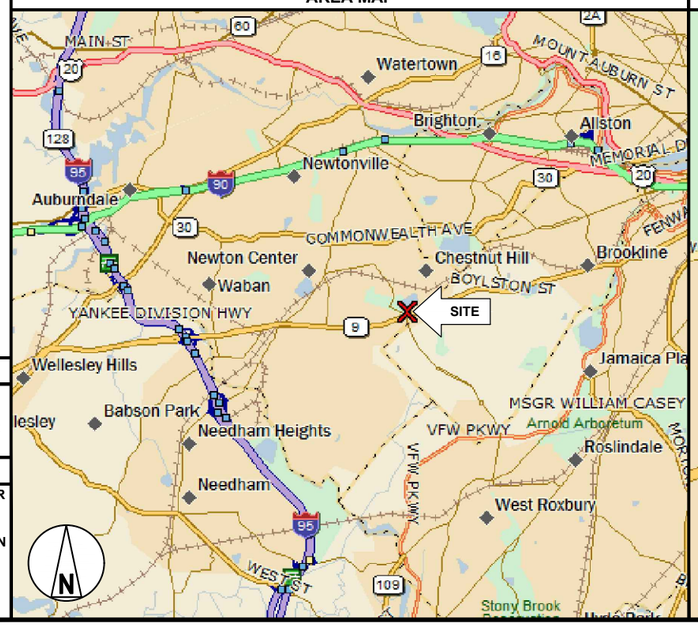
ZONING INFORMATION

PERMITTING JURISDICTION: CITY OF NEWTON
ZONING CLASS: BU4

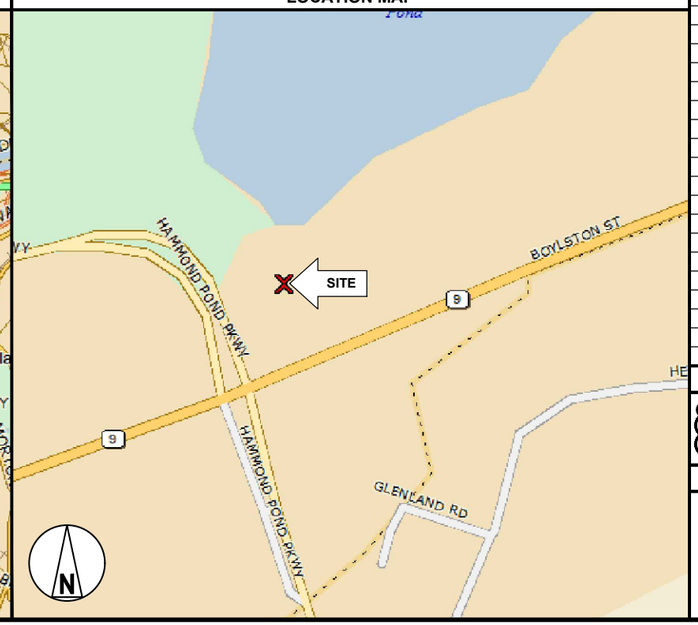
DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

AREA MAP



LOCATION MAP



DRAWING INDEX

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	FOR REFERENCE ONLY	
	QED SWITCHBOARD	
	PROPERTY SURVEY	

ENGINEER OF RECORD

CHRIS ZERR 2
PE # 53013
BLACK & VEATCH CORPORATION

CALL BEFORE YOU DIG

UNDERGROUND SERVICE ALERT
UTILITY NOTIFICATION CENTER OF MASSACHUSETTS
811 OR 1-888-344-7233

3 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

TESLA MOTORS, INC.
3500 DEER CREEK RD
PALO ALTO, CA 94304
(650) 681-5000

BLACK & VEATCH
6800 W 115th St, Suite 2292
OVERLAND PARK, KS 66211
(913) 458-2000

PROJECT NO:	192745
DRAWN BY:	PRP
CHECKED BY:	CNS

REV	DATE	DESCRIPTION
3	04/09/18	ISSUED FOR CONSTRUCTION
2	11/13/17	REISSUED FOR PERMITTING
1	10/17/17	REISSUED FOR PERMITTING
0	09/27/17	ISSUED FOR PERMITTING

COMMONWEALTH OF MASSACHUSETTS
CHRISTOPHER M. ZERR
No.53013
REGISTERED PROFESSIONAL ENGINEER
04/09/2018

MA011_CHESTNUT HILL
CHESTNUT HILL
49 BOLYSTON ST
CHESTNUT HILL, MA 02647

SHEET TITLE
TITLE SHEET & PROJECT DATA

SHEET NUMBER
T-1

EXISTING ASPHALT PARKING LOT

EXISTING PROPERTY LINE (TYP)

EXISTING BUILDING (TYP)

EXISTING TREE (TYP)

EXISTING SITE ACCESS ROAD

EXISTING SIGN (TYP)

EXISTING SLOPED GRANITE CURB (TYP)

EXISTING PEDESTRIAN CROSSING SIGNAL (TYP)

EXISTING DETECTABLE WARNING (TYP)

EXISTING BUSH (TYP)

EXISTING GRASSY AREA

EXISTING LIGHT POLE (TYP)

EXISTING PARKING LINE (TYP)

SEE PROPOSED SITE PLAN SHEET A-3

EXISTING STORM INLET (TYP)

EXISTING STORM SEWER LINE (TYP)

EXISTING STORM MANHOLE (TYP)

EXISTING SIGNAL MAST

EXISTING TRAFFIC SIGNAL CONTROL BOX (TYP)

EXISTING ELECTRIC VAULT (TYP)

EXISTING UTILITY POLE (TYP)

EXISTING COMMUNICATION POLE WITH CAMERA

EXISTING UNDERGROUND TELEPHONE LINE (TYP)

EXISTING UNDERGROUND ELECTRIC LINE (TYP)

EXISTING CONCRETE CURB (TYP)

EXISTING OVERHEAD ELECTRIC LINE (TYP)

N

20' 10' 0 20' 40'

1"=20'

OVERALL SITE PLAN

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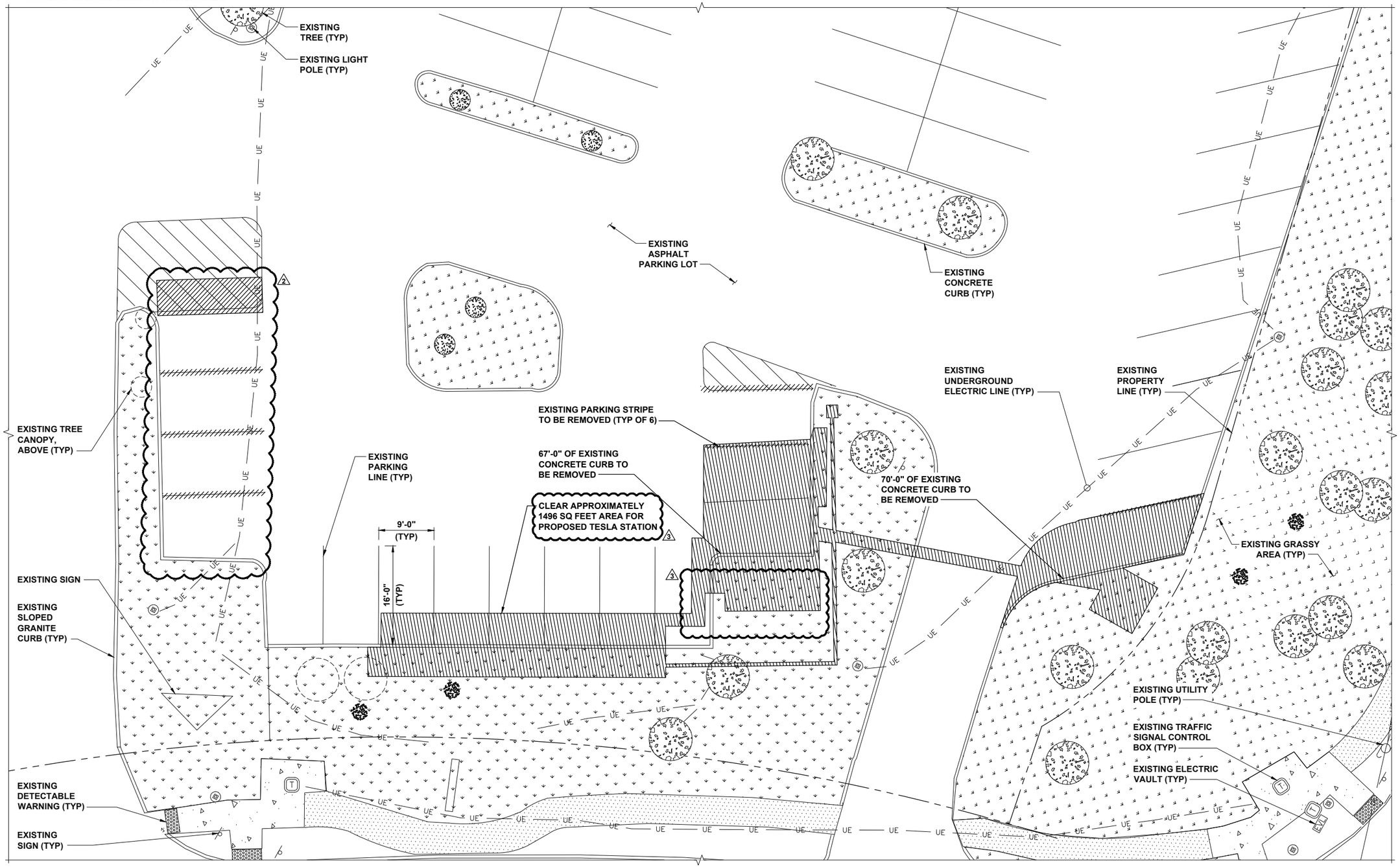
MA011_CHESTNUT HILL
CHESTNUT HILL
49 BOLYSTON ST
CHESTNUT HILL, MA 02647

SHEET TITLE
OVERALL SITE PLAN

SHEET NUMBER
A-1

NOTES

1. ALL QUANTITIES LISTED IN DEMOLITION PLAN SHEET ARE ONLY APPROXIMATIONS. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES BEFORE BIDDING.
2. CONTRACTOR TO AVOID PRIMARY ROOT SYSTEM. CONTACT ENGINEER IF TREE PRIMARY ROOT SYSTEM IS LOCATED BENEATH TRENCH AREA.



DEMOLITION SITE PLAN

TESLA MOTORS, INC.
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(650) 681-5000

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SHEET TITLE
DEMOLITION SITE PLAN

SHEET NUMBER
A-2

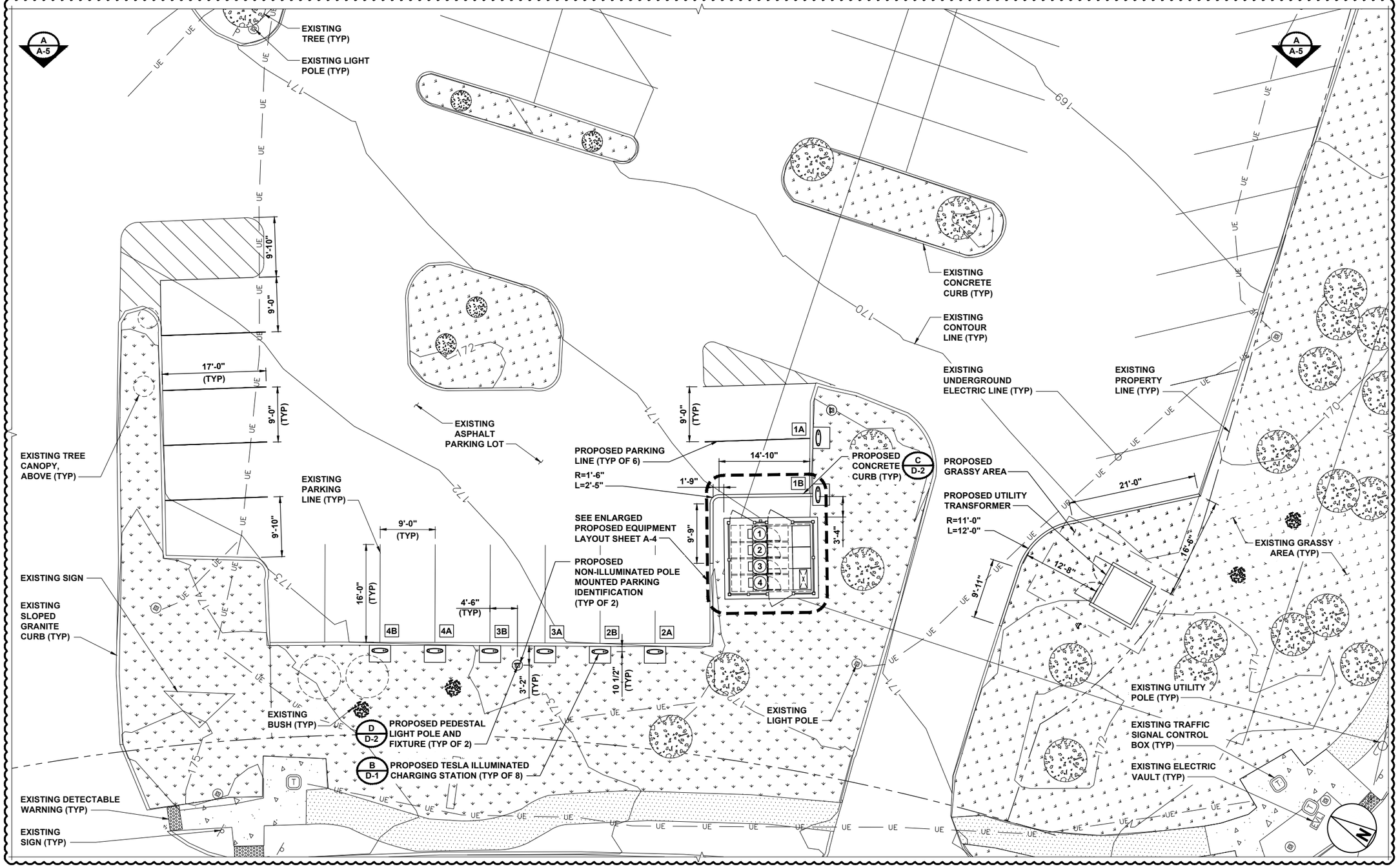
NOTES

1. SOD PLANTED IN THE FALL MUST ESTABLISH ITS ROOTS BEFORE THE FIRST WINTER FROST. DETERMINE WHEN THE FIRST FROST USUALLY OCCURS, AND PLANT THE SOD NO LATER THAN ONE MONTH BEFORE THE FIRST FROST. IF THE CONSTRUCTION IS FINISHED LATER THAN ONE MONTH BEFORE THE FIRST FROST, USE STRAW UNTIL SOD CAN BE INSTALLED.
2. FOR SIGNAGE INFORMATION SEE SHEET A-5.

△3

PROJECT AREA STALL COUNT	
EXISTING STALL COUNT	9
PROPOSED TESLA CHARGING STALLS	8

TESLA EQUIPMENT SCHEDULE			
TESLA EQUIPMENT	DESCRIPTION	PART NUMBER	QUANTITY
SUPERCHARGING CABINETS	GEN 2 L-N SUPERCHARGER	1033026-04-E	4
CHARGE POST BOLLARDS	BOLT DOWN BOLLARDS	1024070-01-D	8
CHARGE POST JUNCTION BOX	DUAL CONDUCTORS	1048082-00-A	8
CHARGE POST DOCK	NORTH AMERICA	1028384-00-C	8



PROPOSED SITE PLAN

8' 4' 0 8' 16'
1/8"=1'-0"

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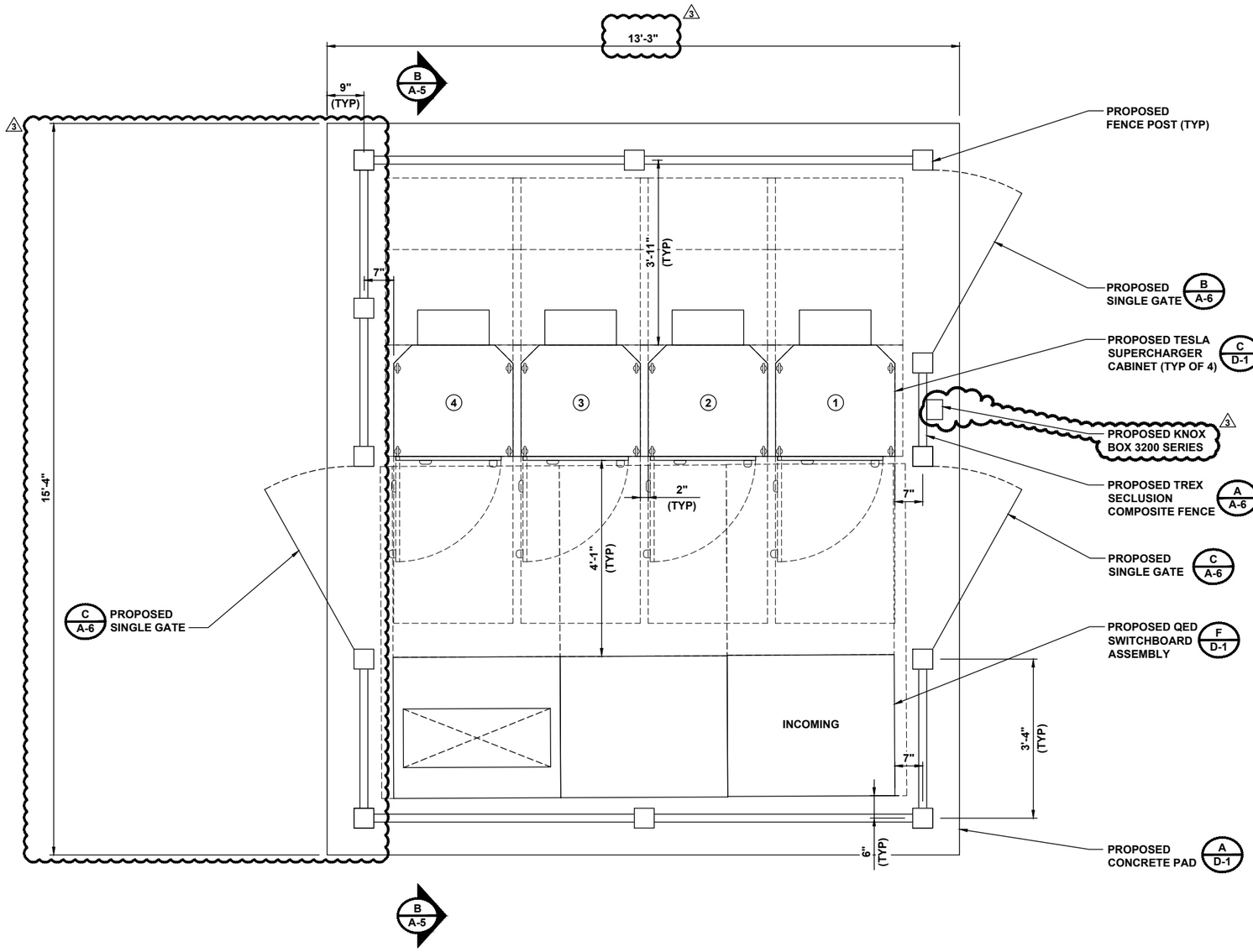
SHEET TITLE
PROPOSED SITE PLAN

SHEET NUMBER
A-3



ENLARGED PROPOSED EQUIPMENT LAYOUT

12" 6" 0 1' 2' 3'

3/4"=1'-0"

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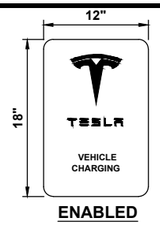
SHEET TITLE

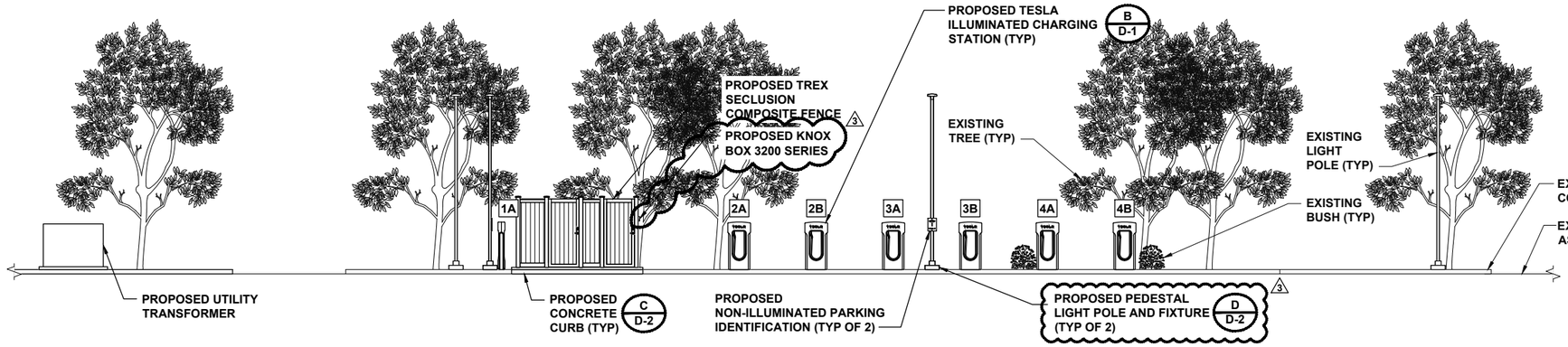
ENLARGED PROPOSED EQUIPMENT LAYOUT

SHEET NUMBER

A-4



CHARGING POST SIGNAGE SCHEDULE		
SUPERCHARGER	CHARGE POST	IDENTIFICATION TO INSTALL
①	1A	ENABLED
	1B	-
②	2A	-
	2B	-
③	3A	-
	3B	ENABLED
④	4A	-
	4B	-



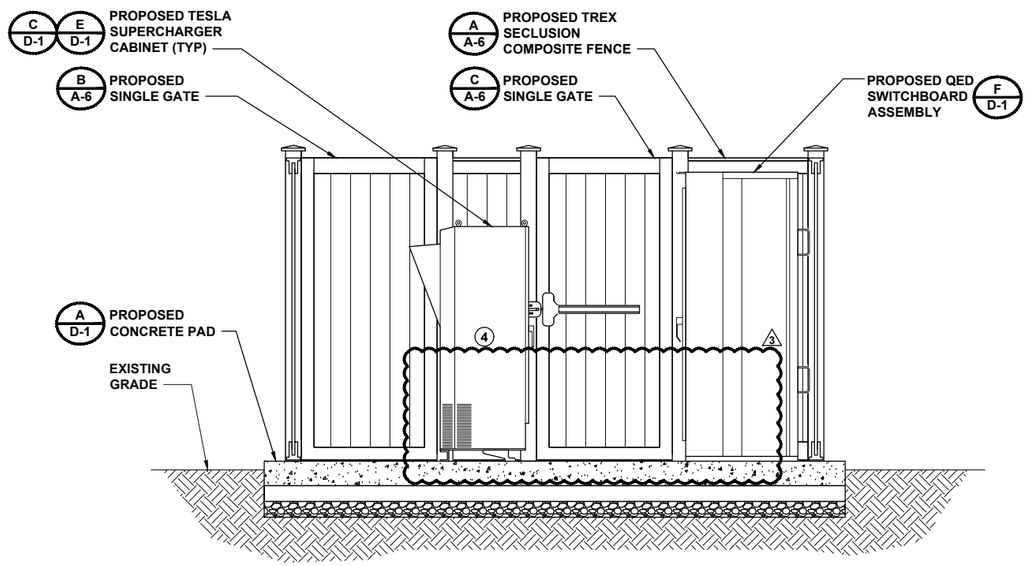
NOTES

1. BOTTOM OF LOWEST IDENTIFICATION TO BE INSTALLED 54" ABOVE GRADE.
2. SEE SHEET GN-3 FOR IDENTIFICATION POST NOTES.

SITE ELEVATION

8' 4' 0 8' 16'
1/8"=1'-0"

A



SITE ELEVATION

12" 6" 0 1' 2' 3' 4' 5'
1/2"=1'-0"

B

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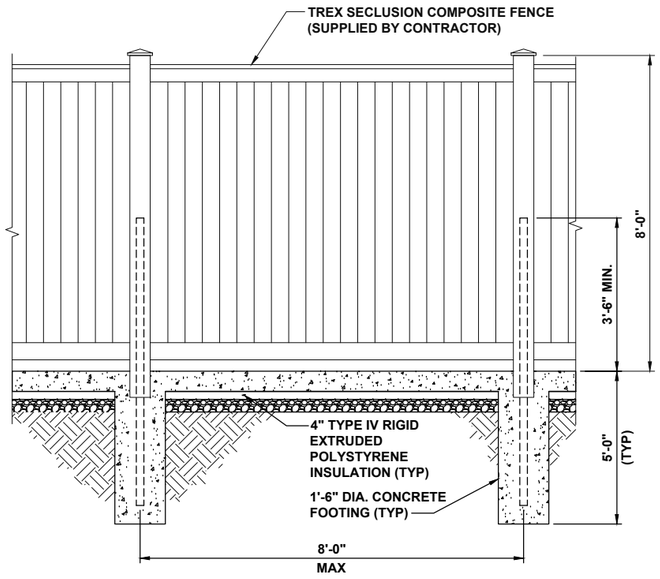
SHEET TITLE
SITE ELEVATIONS

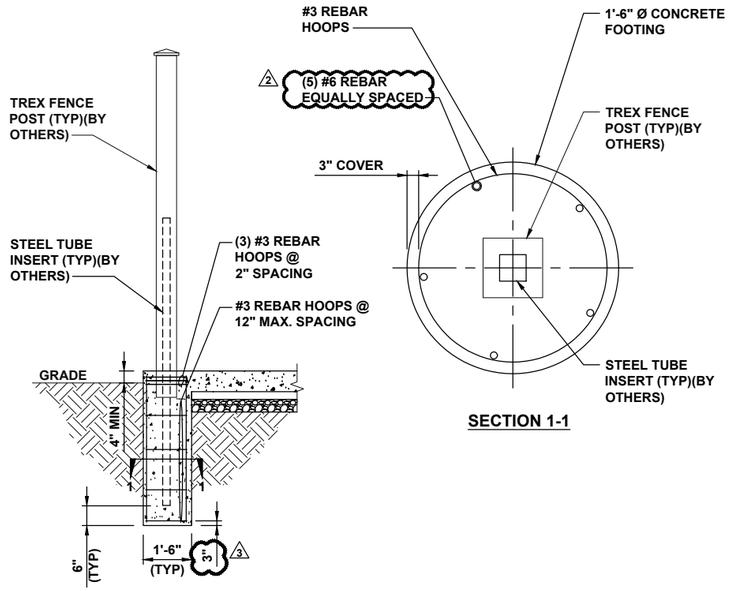
SHEET NUMBER
A-5

NOTES

1. COLOR: "SADDLE"
2. PICK TREX SECLUSION COMPOSITE FENCE THAT MEETS THESE REQUIREMENTS (WIND SPEED = 130 MPH, SEISMIC: SDS = 0.286G, SEISMIC DESIGN CATEGORY B. (3))



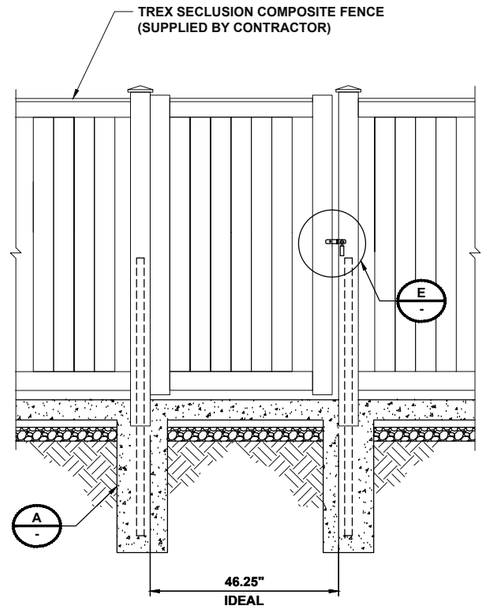
TREX FENCE ELEVATION



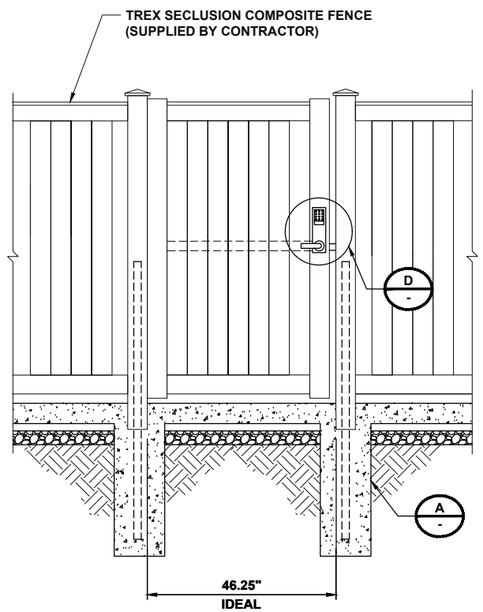
SECTION 1-1

TYPICAL TREX FENCE ELEVATION

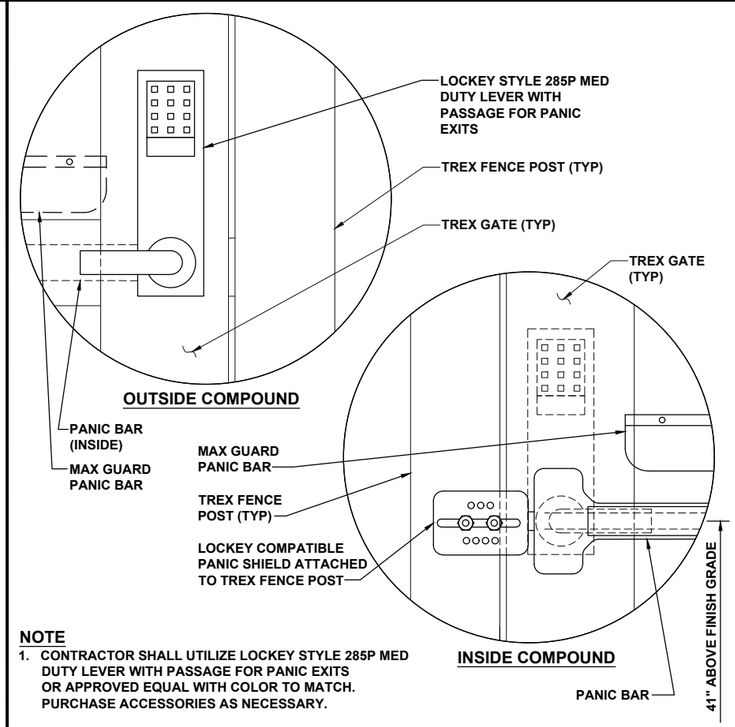
TYPICAL TREX FENCE DETAIL | NO SCALE | A



SINGLE GATE DETAIL | NO SCALE | B



SINGLE GATE DETAIL | NO SCALE | C



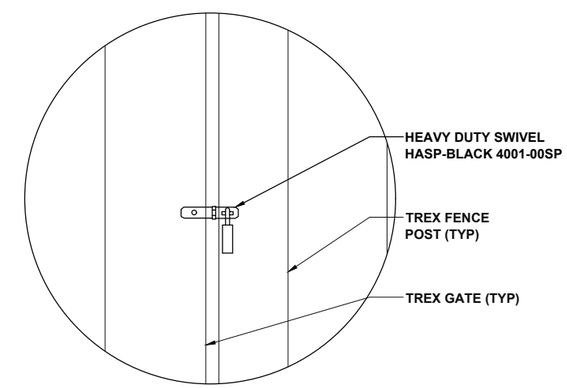
NOTE

1. CONTRACTOR SHALL UTILIZE LOCKEY STYLE 285P MED DUTY LEVER WITH PASSAGE FOR PANIC EXITS OR APPROVED EQUAL WITH COLOR TO MATCH. PURCHASE ACCESSORIES AS NECESSARY.

SINGLE GATE LOCK DETAIL W/ KEYPAD | NO SCALE | D

NOTE

1. HARDWARE NOT TO BE INSTALLED ON MEANS OF EGRESS GATES.



SINGLE GATE LOCK DETAIL | NO SCALE | E

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SHEET TITLE
FENCE DETAILS

SHEET NUMBER
A-6

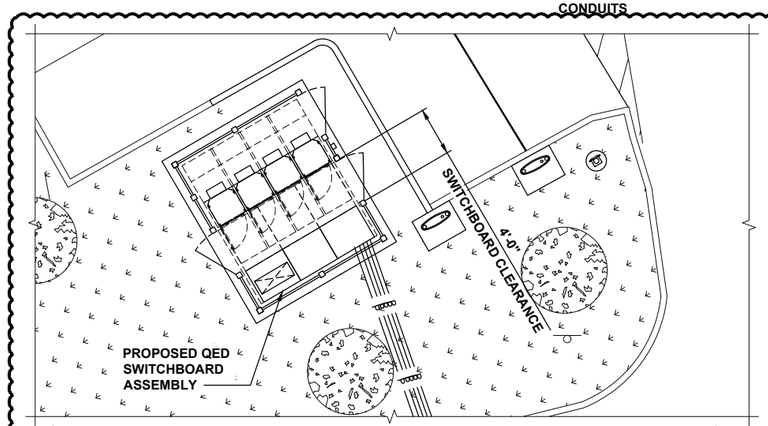
NOTES

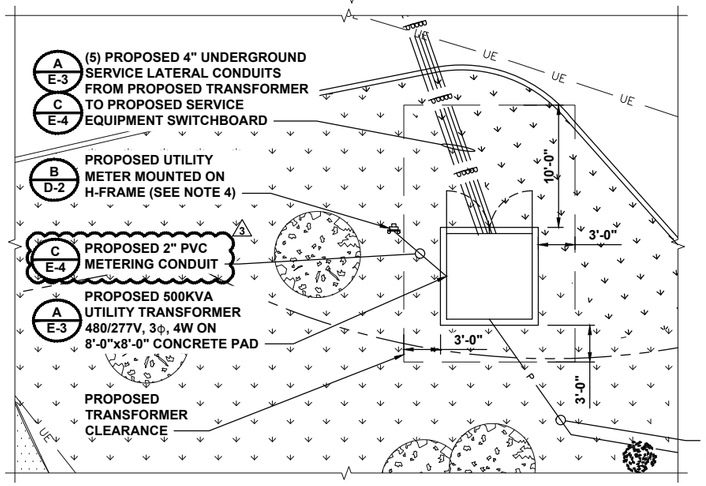
* AC UTILITY SERVICE CONDUCTORS: 22 FEET IS ADDED TO THE HORIZONTAL RUN LENGTH TO ACCOUNT FOR BURIED DEPTH.

1. THE UTILITY DESIGN DETAILS SUMMARIZED ON THIS SHEET ARE FOR PROPERTY OWNER REVIEW. THE CONTRACTOR SHALL REFERENCE THE UTILITY DESIGN PACKAGE (UDP), PROVIDED WITH THE "ISSUED FOR CONSTRUCTION" DRAWINGS FOR BIDDING. THE CONTRACTOR SHALL INSTALL THE UTILITY RELATED SCOPE OF WORK PER UTILITY CONSTRUCTION SPECIFICATION REQUIREMENTS.
2. UTILITY EQUIPMENT INSTALLATIONS AND PREP WORK AND TERMINATION OF SERVICE CONDUCTORS SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY ENGINEER AT TIME OF PRECONSTRUCTION MEETING TO ENSURE ACCURACY OF INSTALLATIONS.
3. TRANSFORMER BOLLARD PROTECTION TO BE INSTALLED PER UTILITY SPECIFICATION. ADDITIONAL BOLLARD PROTECTION MAY BE REQUIRED AT THE DISCRETION OF THE UTILITY FIELD INSPECTION PERSONNEL.
4. EXACT UTILITY METER LOCATION TO BE DETERMINED IN THE FIELD AND AT THE DISCRETION OF UTILITY FIELD PERSONNEL.
5. CONTRACTOR TO AVOID PRIMARY ROOT SYSTEM. CONTACT ENGINEER IF TREE PRIMARY ROOT SYSTEM IS LOCATED BENEATH TRENCH AREA.

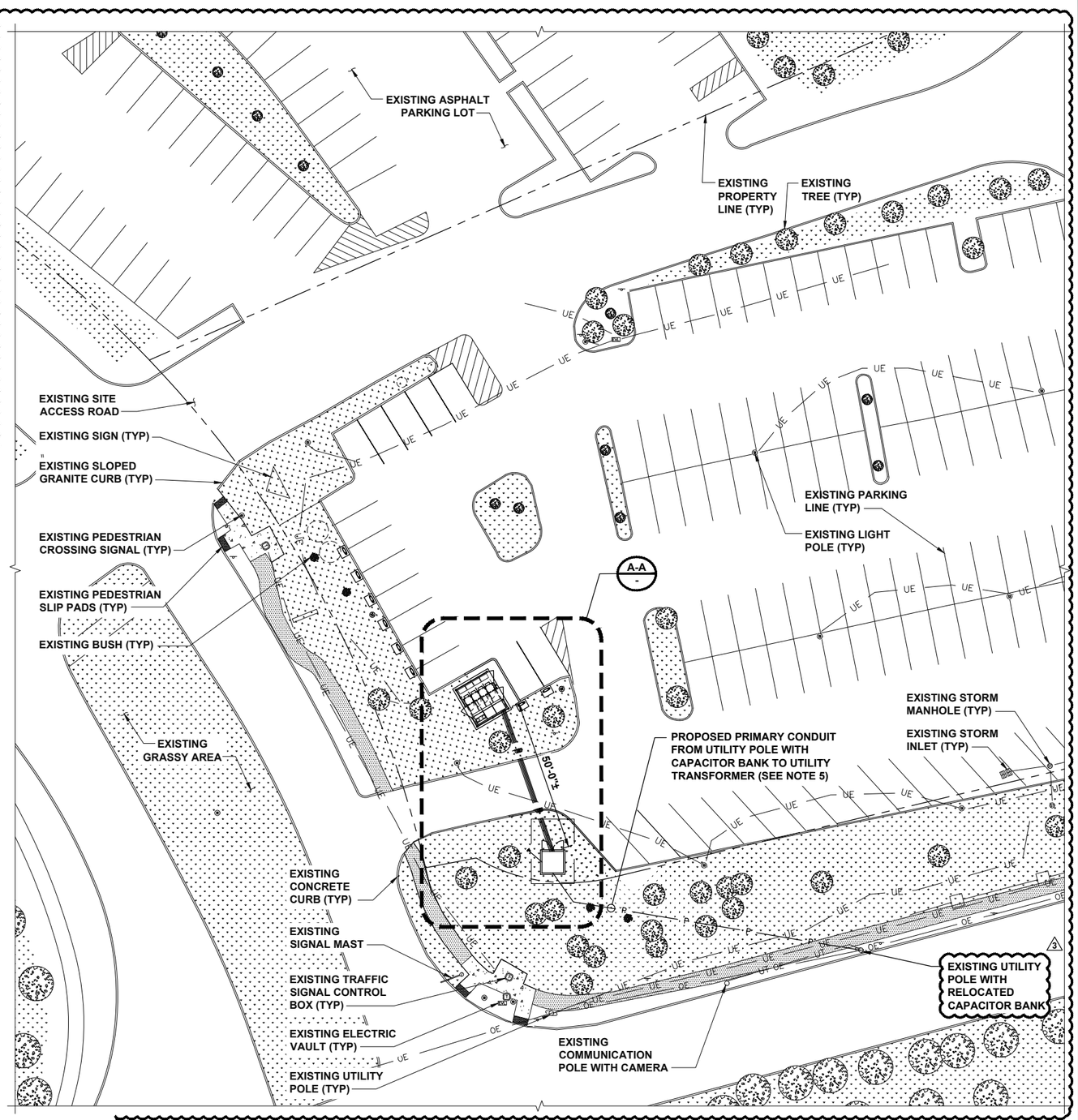
UTILITY SERVICE LATERAL LENGTHS		
UTILITY TRANSFORMER TO SERVICE EQUIPMENT	LINEAR LENGTH (FT)	*ESTIMATED LENGTH (FT)*
	50	72
TOTAL LENGTH OF Cu WIRE PER CONDUIT =		288
NUMBER OF WIRE FILLED CONDUITS		3
TOTAL LENGTH OF Cu WIRE =		864

(SEE SHEET E-3 FOR WIRE CONFIGURATION)
*TOTAL LENGTH OF Cu WIRE = 4 WIRES PER CONDUIT x ESTIMATED LENGTH x NUMBER OF FILLED CONDUITS





PLAN A-A
SCALE: NO SCALE



UTILITY PLAN

20' 10' 0 20' 40'
1"=20'

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SHEET TITLE
UTILITY PLAN

SHEET NUMBER
E-1

NOTES

** AC CONDUCTORS: 16 FEET IS ADDED TO THE HORIZONTAL RUN LENGTH TO ACCOUNT FOR BURIED DEPTH.

*** DC CONDUCTORS: 22 FEET IS ADDED TO THE HORIZONTAL RUN LENGTH TO ACCOUNT FOR BURIED DEPTH.

1. CONDUCTOR LENGTHS ARE ESTIMATES ONLY. LENGTHS ARE BASED ON DIAGRAMMATICAL MEASUREMENTS AND APPROXIMATED BURIED DEPTHS. THE EXACT ROUTING PATH AND CONDUCTOR RUN LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD BASED ON PHYSICAL MEASUREMENTS. CONTRACTOR TO ORDER CONDUCTOR BASED ON FIELD MEASUREMENTS (MUST BE APPROVED BY TESLA INSTALLATION MANAGER).
2. ALL ELECTRICAL WORK AND RELATED ACTIVITIES PERFORMED ON-SITE SHALL BE DONE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (NEC) STANDARDS BEING ENFORCED BY ALL APPLICABLE JURISDICTIONAL REQUIREMENTS AT THE TIME OF CONSTRUCTION.
3. THE MAXIMUM RUN LENGTH BETWEEN SUPERCHARGER CABINET AND CHARGING POST, INCLUDING BURIED DEPTH IS NOT TO EXCEED 160'. ANY LENGTH BEYOND THIS MAXIMUM SHALL INCLUDE AN RG-6 COAX CABLE RUN IN A SEPARATE 1" CONDUIT.
4. CONTRACTOR TO TRENCH IN ASPHALT.
5. CONTRACTOR TO AVOID PRIMARY ROOT SYSTEM. CONTACT ENGINEER IF TREE PRIMARY ROOT SYSTEM IS LOCATED BENEATH TRENCH AREA.

AC SUPERCHARGER LENGTHS

SUPERCHARGER/ AUTO-TRANS.	LINEAR LENGTH SWGR TO SUPERCHARGER	LINEAR LENGTH AUTO-TRANS. TO SUPERCHARGER	*****ESTIMATED LENGTH
**1	13	0	29
**2	11	0	27
**3	8	0	24
**4	6	0	22
TOTAL LENGTH OF Cu WIRE PER CONDUIT			408
NUMBER OF WIRE FILLED CONDUIT =			4
TOTAL LENGTH OF Cu WIRE =			1632

*****(SEE SHEET E-3 FOR WIRE CONFIGURATION)
TOTAL LENGTH OF AC Cu WIRE = SUM OF ESTIMATED LENGTH x 4 WIRES PER SUPERCHARGER

TOTAL LENGTH GND Cu WIRE = SUM OF ESTIMATED LENGTHS

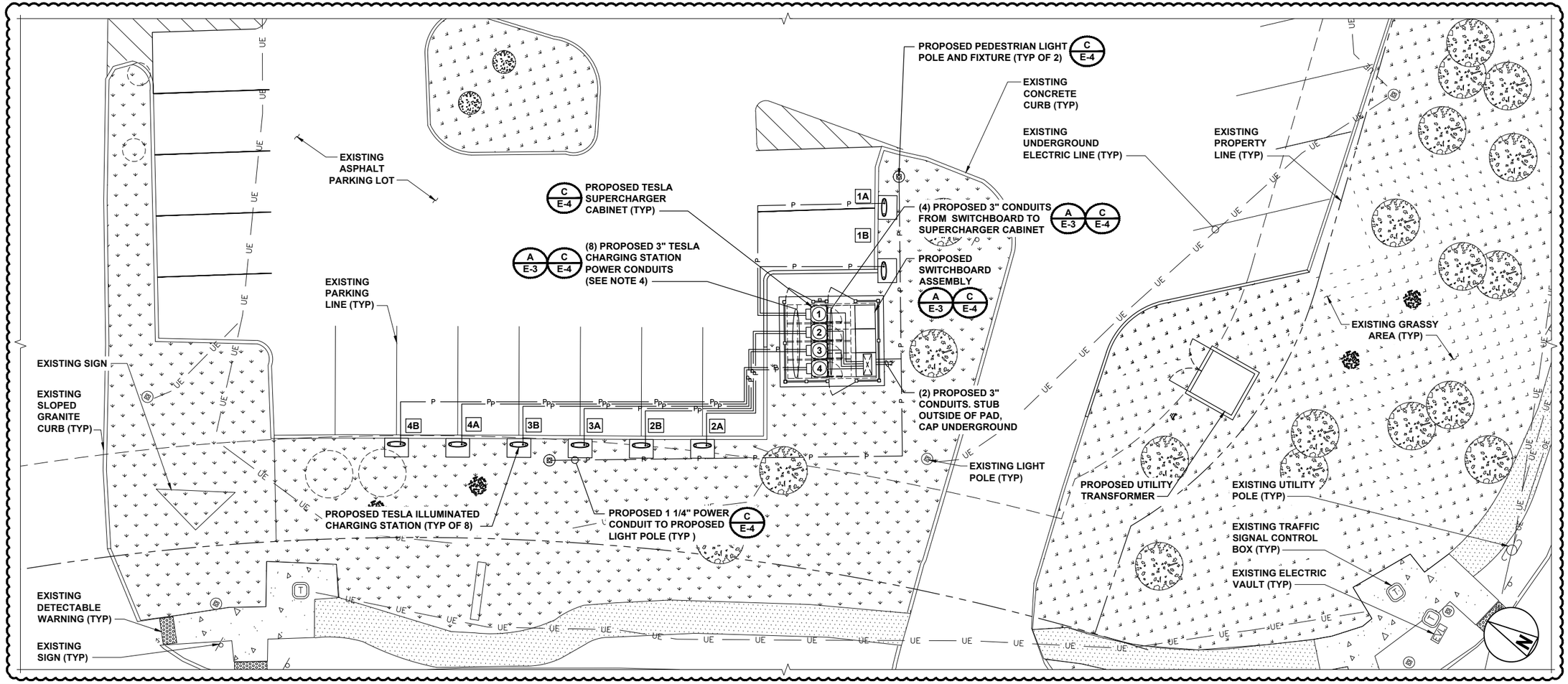
DC CHARGING POST LENGTHS

SUPERCHARGER	CHARGE POST	LINEAR LENGTH (FT)	***ESTIMATED LENGTH (FT)***
1	1A	50	72
	1B	32	54
2	2A	31	53
	2B	41	63
3	3A	47	69
	3B	56	78
4	4A	62	84
	4B	71	93
TOTAL LENGTH OF DC AL WIRE =			2264
TOTAL LENGTH OF #3 AWG GND Cu & COMM CABLE WIRE=			566

(SEE SHEET E-3 FOR WIRE CONFIGURATION)
***TOTAL LENGTH OF DC AL WIRE = SUM OF ESTIMATED LENGTH x 4 WIRES PER CHARGE POST

***TOTAL LENGTH OF GND Cu AND COMM CABLE WIRE = SUM OF ESTIMATED LENGTHS

3



REFERENCE SHEET E-1 FOR A SUMMARY OF THE UTILITY RELATED CONSTRUCTION RESPONSIBILITIES AND DESIGN DETAILS

ELECTRICAL PLAN

6' 4' 2' 0 5' 10'
3/16"=1'-0"

TESLA MOTORS, INC.
3500 DEER CREEK RD
PALO ALTO, CA 94304
(650) 681-5000

BLACK & VEATCH
6800 W 115th St, Suite 2292
OVERLAND PARK, KS 66211
(913) 458-2000

PROJECT NO:	192745
DRAWN BY:	PRP
CHECKED BY:	CNS

REV	DATE	DESCRIPTION
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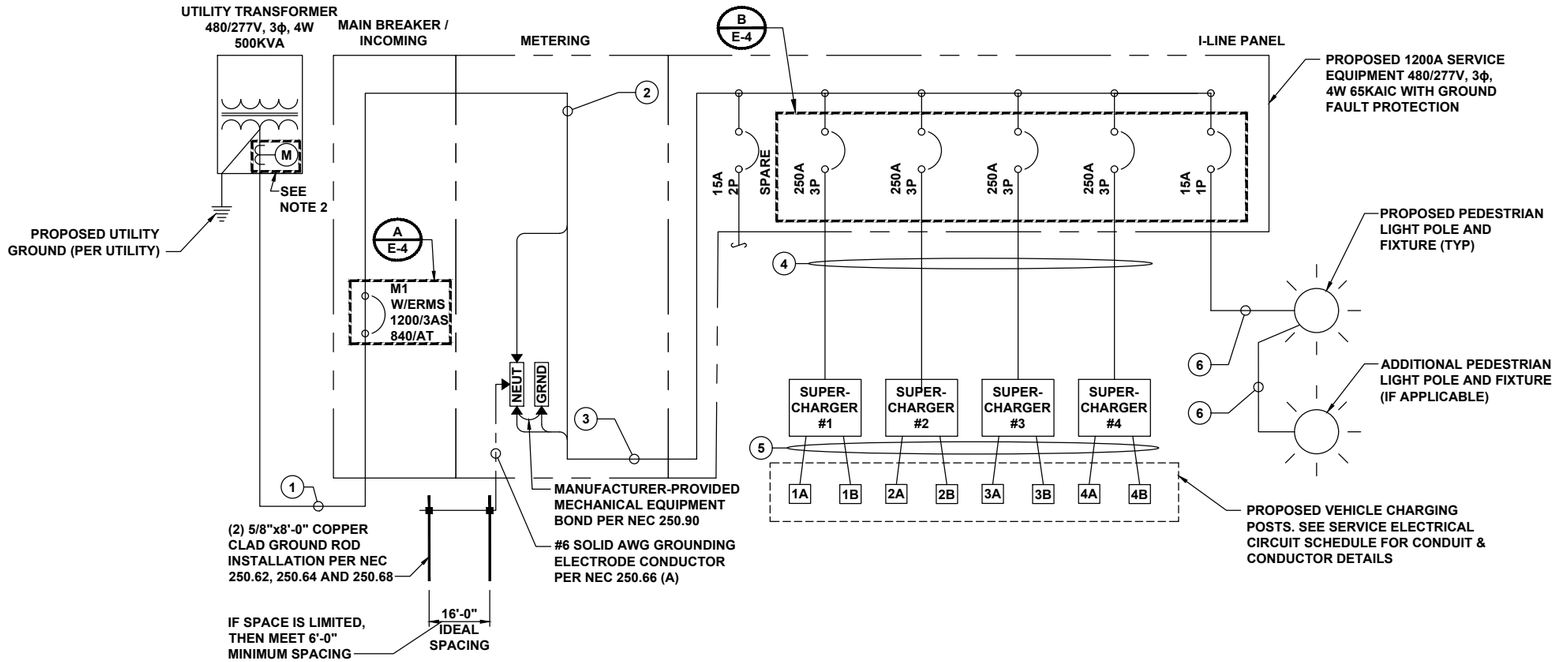
COMMONWEALTH OF MASSACHUSETTS
CHRISTOPHER M. ZERR
No.53013
REGISTERED PROFESSIONAL ENGINEER
04/09/2018

MA011_CHESTNUT HILL
CHESTNUT HILL
49 BOLYSTON ST
CHESTNUT HILL, MA 02647

SHEET TITLE
ELECTRICAL PLAN

SHEET NUMBER
E-2



SYSTEM ONE-LINE DIAGRAM

NO SCALE | A

SERVICE ELECTRICAL CIRCUIT SCHEDULE

NO	FROM	TO	CONFIGURATION
1	UTILITY TRANSFORMER	PROPOSED SERVICE EQUIPMENT; INCOMING	(3) 300MCM Cu (THWN-2) & (1) 300MCM Cu (THWN-2) NEUT IN EACH OF (3) 4" CONDUIT +(2) SPARE 4" CONDUIT
2	PROPOSED SERVICE EQUIPMENT; INCOMING	PROPOSED SERVICE EQUIPMENT; 1200A MAIN BREAKER	FACTORY INSTALLED 1200A BUSS
3	PROPOSED SERVICE EQUIPMENT; 1200A MAIN BREAKER	PROPOSED SERVICE EQUIPMENT; BRANCH CIRCUIT DISTRIBUTION I-LINE PANEL	FACTORY INSTALLED 1200A BUSS
4	PROPOSED SERVICE EQUIPMENT; I-LINE PANEL (250 AMP)	PROPOSED TESLA SUPERCHARGER #1	C1
	PROPOSED SERVICE EQUIPMENT; I-LINE PANEL (250 AMP)	PROPOSED TESLA SUPERCHARGER #2	C1
	PROPOSED SERVICE EQUIPMENT; I-LINE PANEL (250 AMP)	PROPOSED TESLA SUPERCHARGER #3	C1
	PROPOSED SERVICE EQUIPMENT; I-LINE PANEL (250 AMP)	PROPOSED TESLA SUPERCHARGER #4	C1

SERVICE ELECTRICAL CIRCUIT SCHEDULE CONTINUED

NO	FROM	TO	CONFIGURATION	
5	PROPOSED TESLA SUPERCHARGER #1	PROPOSED TESLA CHARGING POST	1A	C2
			1B	C2
	PROPOSED TESLA SUPERCHARGER #2	PROPOSED TESLA CHARGING POST	2A	C2
			2B	C2
	PROPOSED TESLA SUPERCHARGER #3	PROPOSED TESLA CHARGING POST	3A	C2
			3B	C2
	PROPOSED TESLA SUPERCHARGER #4	PROPOSED TESLA CHARGING POST	4A	C2
			4B	C2
6	PROPOSED SERVICE EQUIPMENT; I LINE PANEL (15AMP)	PROPOSED PEDESTRIAN LIGHTING	(1) #12 AWG CU (THWN-2) + (1) #12 AWG CU (THWN-2) NEUTRAL + (1) AWG (THWN-2) GND IN 1 1/4" CONDUIT	

NOTES

1. NEUTRAL MUST BE INCLUDED FOR PROPER OPERATION OF TESLA SUPERCHARGERS.
2. PROPOSED UTILITY CTS SHALL BE LOCATED WITHIN APPROVED CT COMPARTMENTS APPROVED BY UTILITY AS SHOWN IN THIS DRAWING PACKAGE.
3. ALL CONDUCTORS TO RECEIVE ANTI-OXIDATIVE COATING DURING INSTALLATION.
4. CONTRACTOR TO USE 'SIMPULL THWN-2' ALUMINUM WIRING PER TESLA'S REQUIREMENTS WHEN ALUMINUM IS INDICATED IN THE CIRCUIT SCHEDULE ABOVE.

LEGEND

C1 — (3) 300MCM Cu (THWN-2), (1) 300MCM Cu (THWN-2) NEUT, (1) #4 Cu AWG EGC IN 3" CONDUIT

C2 — (4) - 250 MCM AL (THWN-2) / (2) PER (+/-) POST + #3 AWG Cu EGC + COMM CABLE (PER TESLA) IN 3" CONDUIT

SERVICE ELECTRICAL CIRCUIT SCHEDULE

NO SCALE | B

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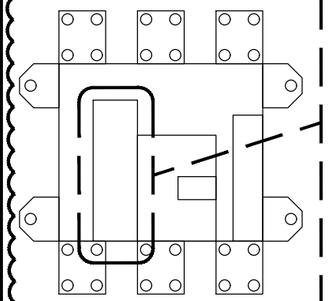
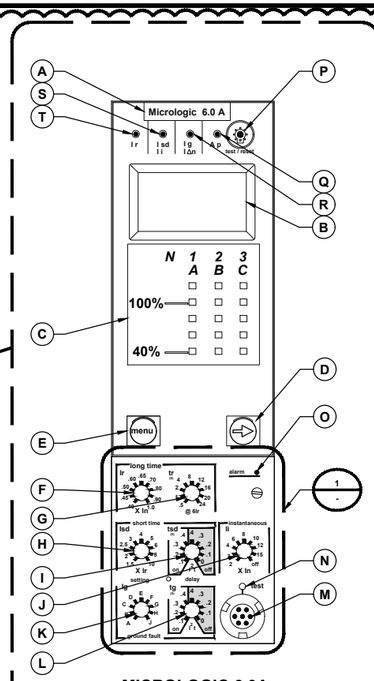
MA011_CHESTNUT HILL
CHESTNUT HILL
49 BOLYSTON ST
CHESTNUT HILL, MA 02647

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-3

MAIN OCPD

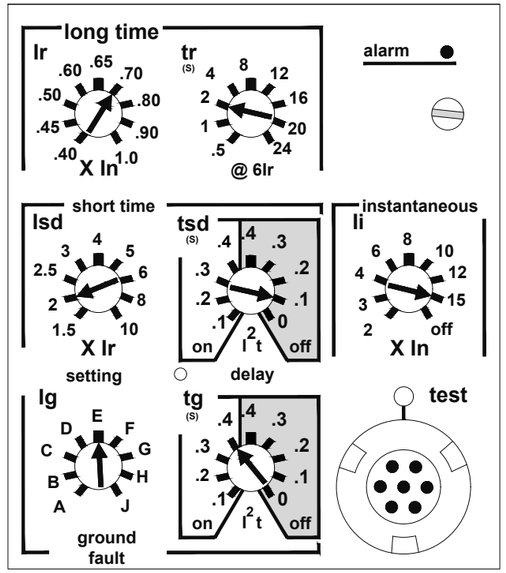




MICROLOGIC 6.0A
ELECTRONIC TRIP UNIT PANEL

THE MICROLOGIC 6.0A TRIP UNIT PROVIDES SELECTIVE AND GROUND-FAULT PROTECTION FOR EQUIPMENT (≥1000 A) (LSIG) AND A BUILT-IN AMMETER.

A. TRIP UNIT NAME
B. ALPHANUMERIC DISPLAY
C. THREE-PHASE BAR GRAPH
D. SCROLL BUTTON
E. MENU BUTTON
F. LONG-TIME PICKUP (Ir) SWITCH
G. LONG-TIME DELAY (tr) SWITCH
H. SHORT-TIME PICKUP (Isd) SWITCH
I. SHORT-TIME DELAY (tsd) SWITCH
J. INSTANTANEOUS PICKUP (Ii) SWITCH
K. GROUND-FAULT PICKUP (Ig) SWITCH
L. GROUND-FAULT DELAY (tg) SWITCH
M. TEST PLUG RECEPTACLE
N. GROUND FAULT PUSH-TO-TRIP BUTTON
O. OVERLOAD INDICATOR LIGHT
P. RESET BUTTON FOR BATTERY STATUS CHECK AND TRIP INDICATOR LED
Q. SELF-PROTECTOR INDICATOR LIGHT
R. GROUND-FAULT INDICATOR LIGHT
S. SHORT-TIME OR INSTANTANEOUS TRIP INDICATOR LIGHT
T. LONG-TIME TRIP INDICATOR LIGHT

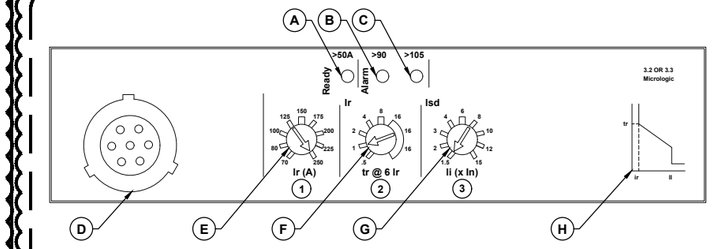


SECTION 1

NOTES

1. THE PLUG SETTINGS DEPICTED WITHIN THIS DETAIL SHALL BE USED ON ALL R-FRAME CIRCUIT BREAKERS REGARDLESS OF AMP RATING.
2. THESE CIRCUIT BREAKER TRIP SETTINGS ARE NOT COORDINATED WITH UTILITY TRIP SETTINGS.
3. BREAKERS 1200A AND GREATER INCLUDE ENERGY REDUCING MAINTENANCE SWITCHING (ERMS).

MICROLOGIC 6.0A ELECTRONIC TRIP UNIT DETAIL (FOR SWITCHBOARDS 1000A AND LARGER, REQUIRING GROUND FAULT PROTECTION) | NO SCALE | A



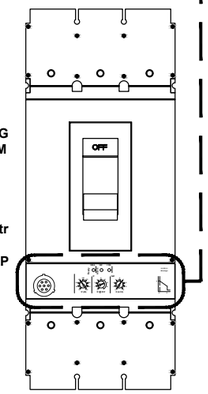
MICROLOGIC 3.2/3.3 ELECTRONIC TRIP UNIT

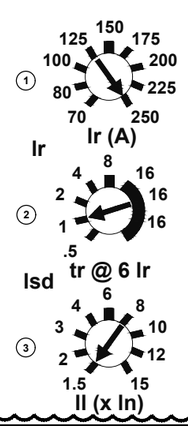
* JJ CIRCUIT BREAKER

480VAC L-L

A. READY LED (GREEN)
B. OVERLOAD PRE-ALARM LED (ORANGE):90% Ir
C. OVERLOAD ALARM LED (RED): 105% Ir THE TRIP UNIT'S In RATING CORRESPONDS TO THE MAXIMUM VALUE OF THE ADJUSTMENT RANGE
D. TEST PORT
E. ADJUSTMENT DIAL FOR LONG-TIME PROTECTION DELAY tr
F. ADJUSTMENT DIAL FOR SHORT-TIME PROTECTION PICKUP Isd
G. ADJUSTMENT DIAL FOR INSTANTANEOUS PROTECTION PICKUP Ii
H. TRIP CURVE

* BREAKERS ARE RATED FOR 80%

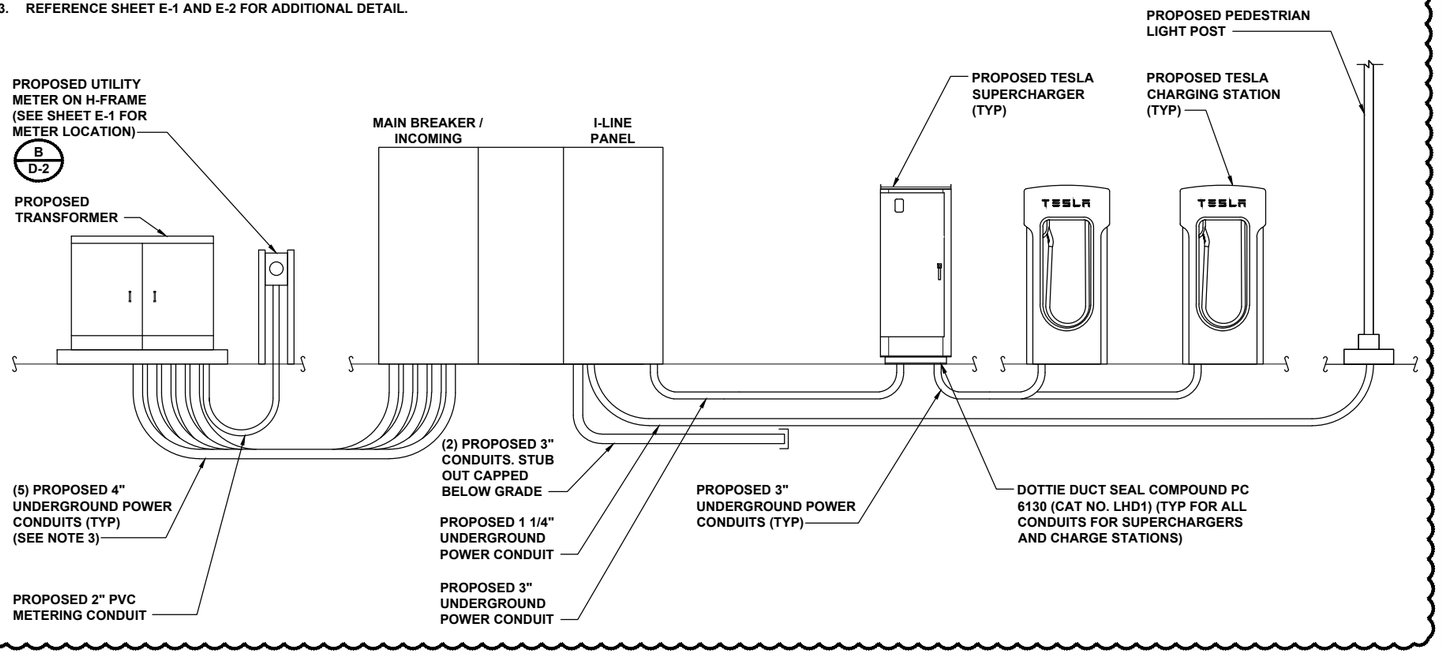




MICROLOGIC 3.2/3.3 ELECTRONIC TRIP UNIT DETAIL | NO SCALE | B

NOTES

1. CONDUITS SHALL BE BURIED BELOW FROST LINE AND IN COMPLIANCE WITH LOCAL AND NATIONAL CODE REQUIREMENTS.
2. REFER TO SHEET E-3 FOR CONDUCTOR REQUIREMENTS WITHIN CONDUITS.
3. REFERENCE SHEET E-1 AND E-2 FOR ADDITIONAL DETAIL.



CAR CHARGER CONDUIT ELEVATION | NO SCALE | C

DETAIL NOT USED | NO SCALE | D

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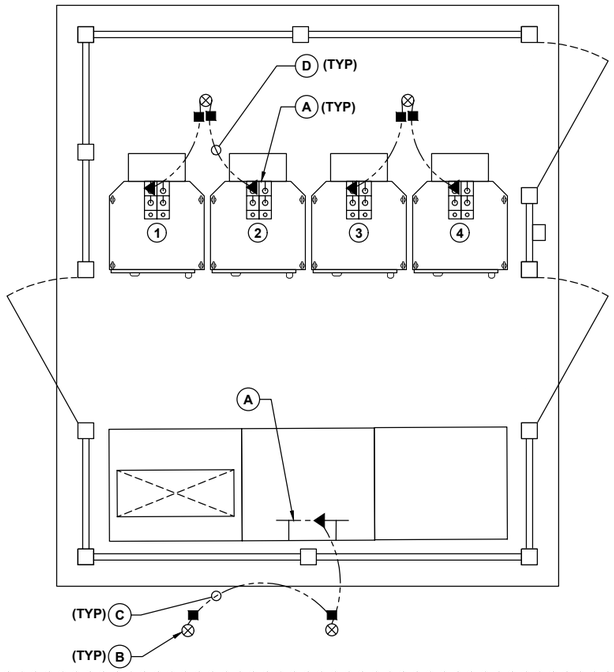
CHRISTOPHER M. ZERR
No.53013
REGISTERED PROFESSIONAL ENGINEER
04/09/2018

MA011_CHESTNUT HILL
CHESTNUT HILL
49 BOLYSTON ST
CHESTNUT HILL, MA 02647

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-4



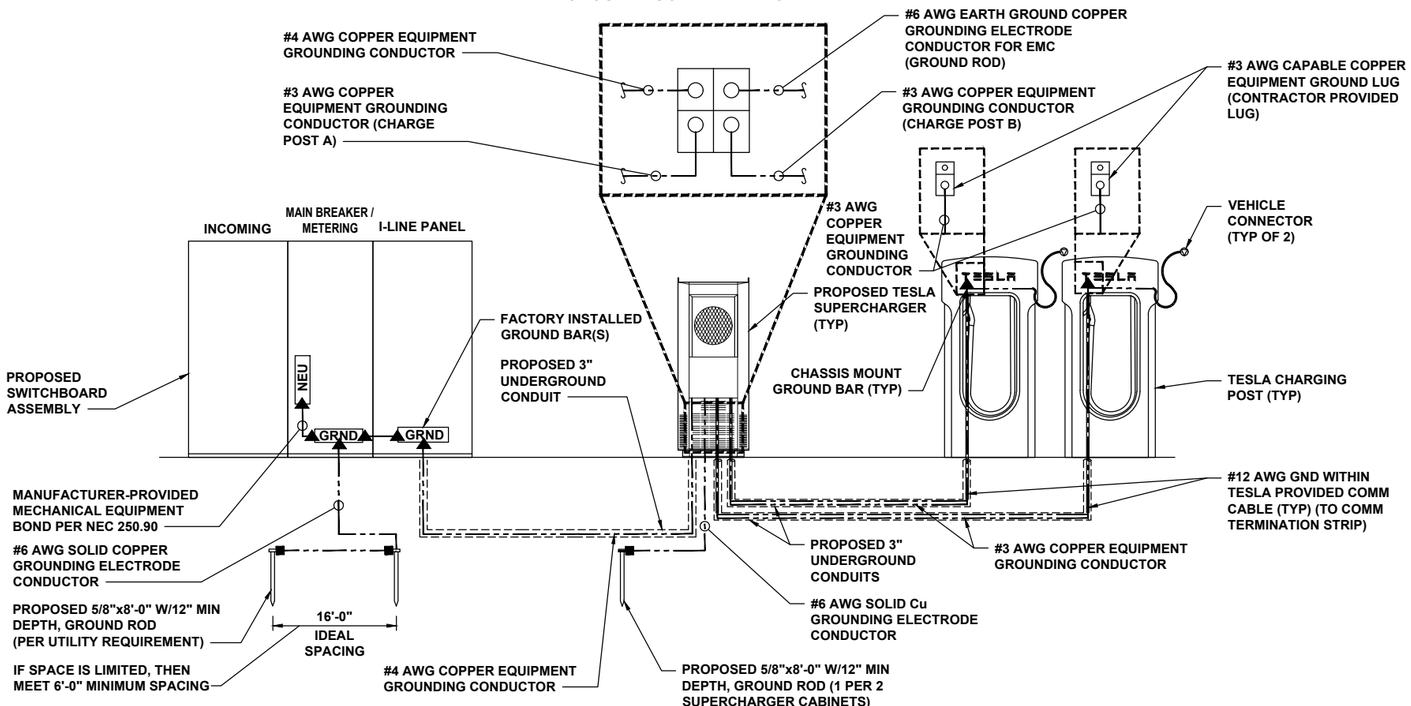
GROUNDING LEGEND

- (A) GROUND BAR/LUG WITHIN PROPOSED EQUIPMENT
- (B) PROPOSED 5/8"x8'-0" GROUND ROD
- (C) PROPOSED SERVICE GROUND
- (D) PROPOSED SUPERCHARGER CABINET GROUND FOR EMC
- PROPOSED GROUND CONDUCTOR
- CADWELD CONNECTION (EXOTHERMIC WELD)
- MECHANICAL CONNECTION
- GROUND ROD

GROUNDING PLAN | NO SCALE | A

DETAIL NOT USED | NO SCALE | B

GROUND LUG TERMINATION DETAIL



GROUNDING SCHEMATIC | NO SCALE | C

DETAIL NOT USED | NO SCALE | D

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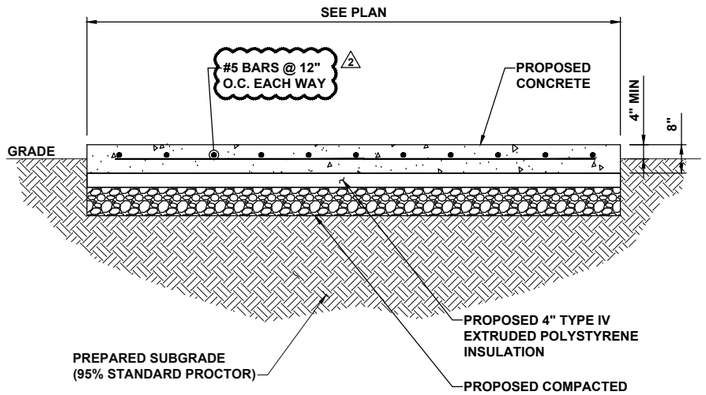
04/09/2018

MA011_CHESTNUT HILL
CHESTNUT HILL
49 BOLYSTON ST
CHESTNUT HILL, MA 02647

SHEET TITLE
GROUNDING DETAILS

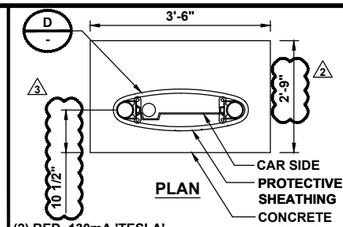
SHEET NUMBER
G-1



CONCRETE PAD DETAIL

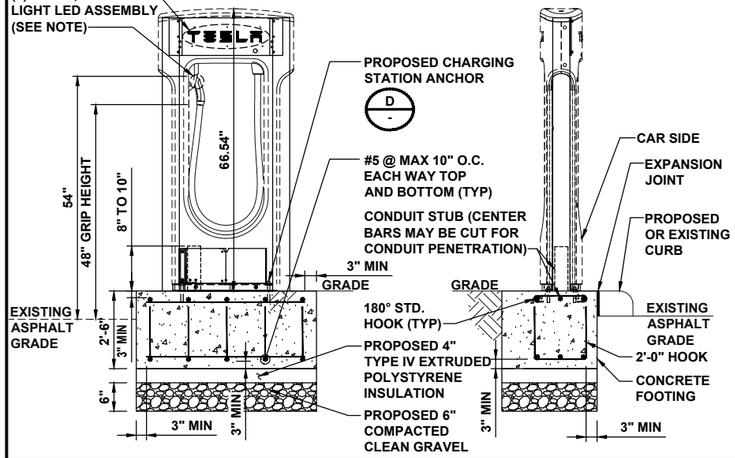
NO SCALE

A



NOTE

1. THE 4.33W, 315mA COMBINED TESLA LOGO AND TASK LIGHT LED ASSEMBLIES DRAWS POWER FROM THE PROPOSED SUPERCHARGER.



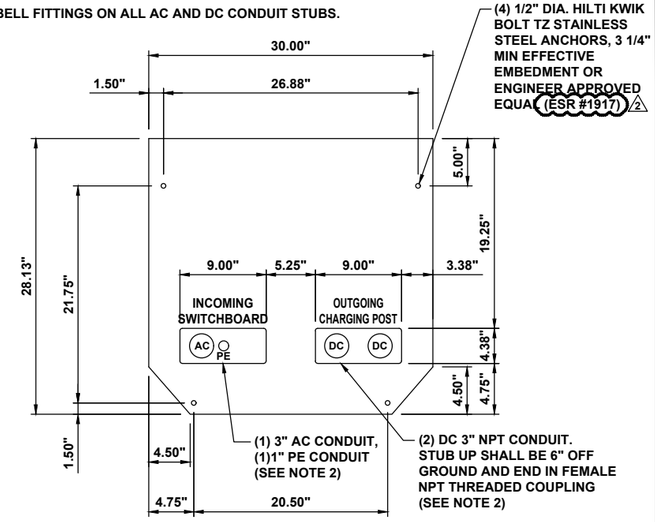
ILLUMINATED CHARGING STATION FOOTING DETAIL

NO SCALE

B

NOTES

1. USE DOTTIE DUCT SEAL COMPOUND PC 6130 (CAT NO LHD1) TO SEAL ENDS OF CONDUIT (TYP. ALL CONDUITS FOR SUPERCHARGERS AND CHARGE STATIONS).
2. USE BELL FITTINGS ON ALL AC AND DC CONDUIT STUBS.



TESLA SUPERCHARGER ANCHOR BOLT & CONDUIT ENTRY DETAIL

NO SCALE

C

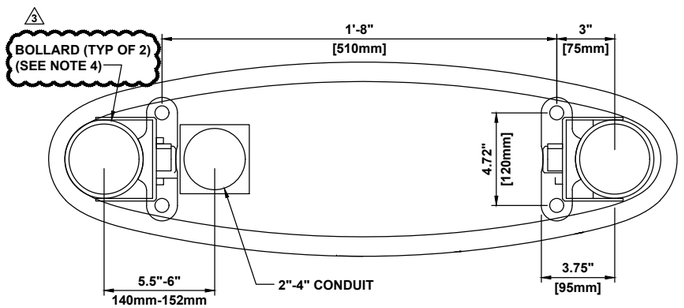
NOTES

1. CONTRACTOR TO PICK CAST IN PLACE OR EPOXY METHOD BASED ON FIELD MEASUREMENTS AND JURISDICTIONAL REQUIREMENTS. (4) 5/8" DIAMETER THREADED ROD STAINLESS STEEL OR HOT DIPPED GALVANIZED, 4" MINIMUM EFFECTIVE EMBEDMENT, 2" MINIMUM EXPOSED ABOVE CONCRETE 3

CAST IN PLACE METHOD:
ASTM HDG OR ENGINEERING APPROVED EQUAL ANCHORS USING TESLA-PROVIDED JIG
ASTM FASTENERS: (1) A563 GR. A NUT AND (1) F436 TYPE 3 WASHER ABOVE BOLLARD FLANGE, (1) A563 GR. A NUT AND (1) F436 TYPE 3 WASHER AT THE BOTTOM OF THE THREADED ROD.

EPOXY METHOD:
ASTM F593 SS OR ENGINEERING APPROVED EQUAL ANCHORS SET WITH RED HEAD EPCON C6+ EPOXY IN DRILLED HOLES LOCATED USING TESLA-PROVIDED JIG
ASTM FASTENERS: (1) F594 NUT AND (1) SS304 OR SS316 WASHER ABOVE BOLLARD FLANGE.

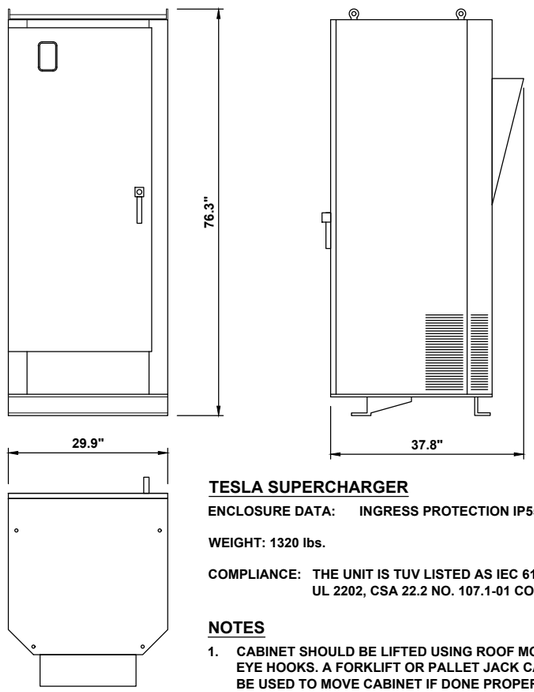
2. HAND TROWEL ABOVE GRADE ELLIPTICAL FOOTING EDGES TO MATCH SHAPE SHOWN IN DETAIL.
3. CAST ENTIRE FOOTING IN ONE MONOLITHIC POUR.
4. BOLLARD MUST BE FROM TESLA AND INCLUDE WELDED ATTACHMENT PADS.



BOLTDOWN DETAIL

NO SCALE

D



TESLA SUPERCHARGER

ENCLOSURE DATA: INGRESS PROTECTION IP55

WEIGHT: 1320 lbs.

COMPLIANCE: THE UNIT IS TUV LISTED AS IEC 61851-23, UL 2202, CSA 22.2 NO. 107.1-01 COMPLIANT.

NOTES

1. CABINET SHOULD BE LIFTED USING ROOF MOUNTED EYE HOOKS. A FORKLIFT OR PALLET JACK CAN ALSO BE USED TO MOVE CABINET IF DONE PROPERLY.
2. SEE SHEET GN-3 FOR CABINET NOTES.

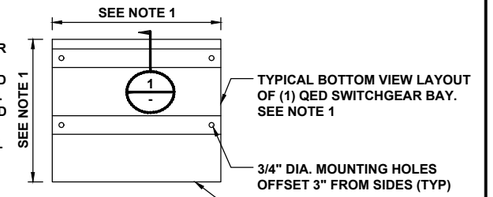
TESLA SUPERCHARGER CABINET DETAIL

NO SCALE

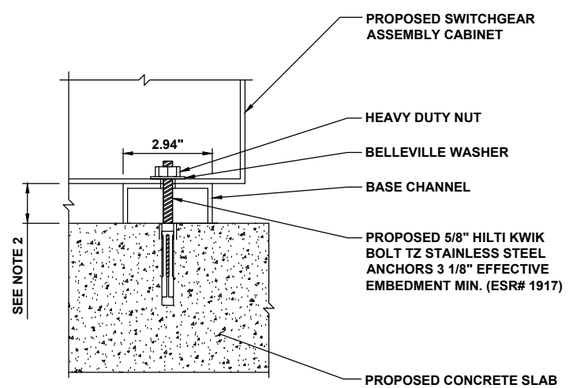
E

NOTES

1. SEE FLOOR PLAN IN REFERENCED QED SWITCHGEAR ASSEMBLY DRAWINGS FOR MOUNTING HOLE LOCATION AND SWITCHGEAR BAY DIMENSIONS.
2. SEE ELEVATION IN REFERENCED QED SWITCHGEAR ASSEMBLY DRAWINGS FOR BASE CHANNEL DIMENSION.
3. MINIMUM 6" CONCRETE EDGE DISTANCE REQUIRED FOR PROPOSED ANCHORAGE.



BOTTOM VIEW



SECTION 1

QED SWITCHGEAR MOUNTING DETAIL

NO SCALE

F

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SHEET TITLE
INSTALLATION DETAILS

SHEET NUMBER
D-1

DETAIL NOT USED

NO SCALE | A

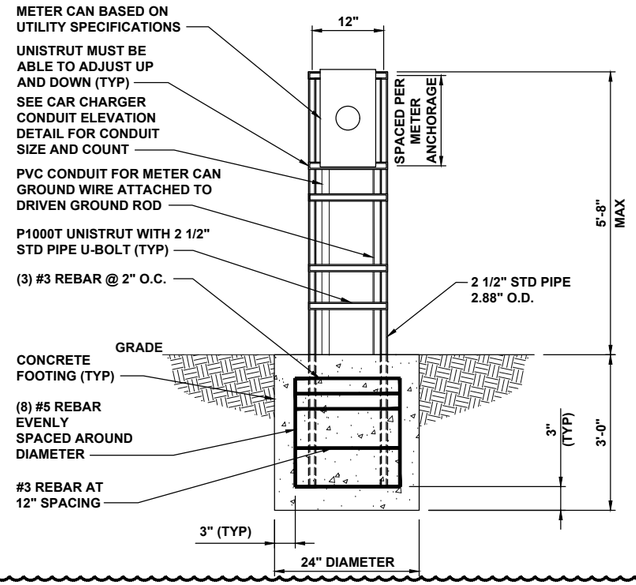
STANDALONE METER CAN UNISTRUT SUPPORT

NO SCALE | B

STANDALONE CUSTOMER PROVIDED TUV INSTRUMENT RATED METER CAN ON UNISTRUT SUPPORT

NOTE

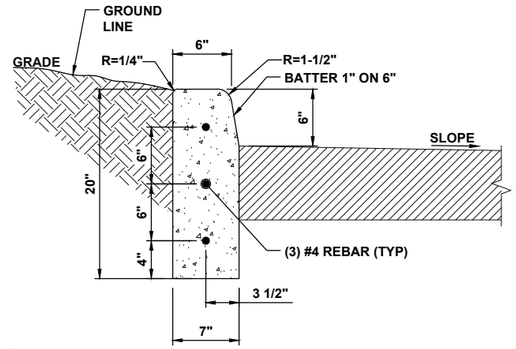
1. GENERIC LOADING: (2) 1 1/4" CONDUIT, METER MAX WIND AREA = 540 SQ IN.



3

STRAIGHT CURB DETAIL

NO SCALE | C



NOTES

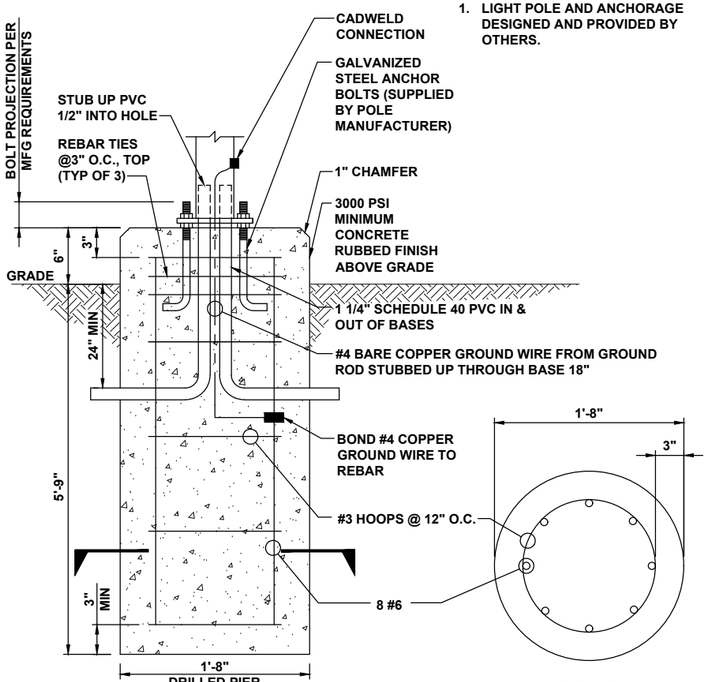
1. BREAKUP AND REMOVE AREA TO BE REPAIRED/REPLACED TO THE NEAREST JOINT OR SAW CUT. DISPOSE OF DEBRIS OFF SITE.
2. INSTALL FORMS AS NECESSARY.
3. COMPACT EXISTING SUBGRADE MATERIAL TO ACHIEVE 95% COMPACTION.
4. POUR CONCRETE USING 3500 PSI AIR ENTRAINED CONCRETE TO MATCH EXISTING ADJACENT CURB.
5. INSTALL CONTROL JOINTS EVERY 10 LINEAR FEET.

PEDESTRIAN LIGHT POLE BASE AND PEDESTRIAN LIGHT FIXTURE DETAIL

NO SCALE | D

NOTES

1. LIGHT POLE AND ANCHORAGE DESIGNED AND PROVIDED BY OTHERS.



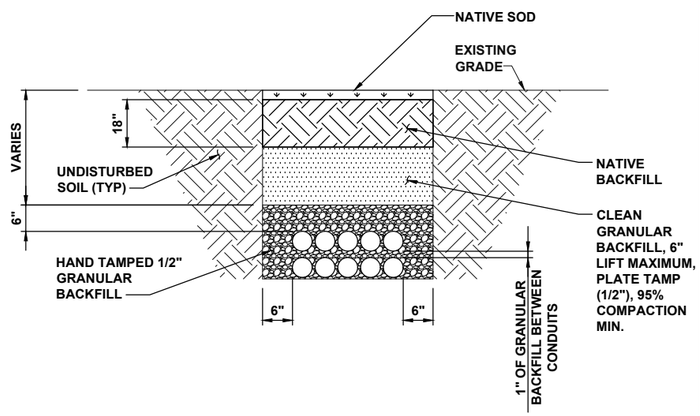
BEACON PRODUCTS / LARGE VIPER LUMINAIRE
SERIES: VPL (VIPER LARGE)
LIGHTING ENGINES: 80NB-180 (180W, LED ARRAY)
OPTICS: T3 (TYPE III)
VOLTAGE: UNV (120-277V)
STANDARD ELECTRICAL OPTIONS; DIMMING DRIVERS
WIHUB (WIRELESS LIGHTING CONTROLS)
MOUNTING: SF2 (2-3/8" OD SLIP-FITTER)
COLOR: RAL-GREY COLOR
CATALOG NUMBER: VP-L-80NB-180-T3-UNV-DD-WIHUB-SF2

UNITED LIGHTING STANDARDS ANCHOR BASE POLE
SERIES: RTS
POLE HEIGHT: 25 FEET
DRILLED MOUNT OPTION: D1 (DRILLED FOR 1 FIXTURE)
COLOR: RAL - GREY COLOR
CATALOG NUMBER: RTS-25-8011-D1-DR

3

TYPICAL NON-UTILITY CONDUIT UNDER SOIL TRENCH DETAIL

NO SCALE | E



NOTES

1. ANY EXCAVATION LEFT OPEN SHOULD BE SECURELY FENCED OFF.
2. ANY PAVEMENT DAMAGE DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO PRE CONSTRUCTION CONDITIONS OR BETTER.

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(650) 681-5000

BLACK & VEATCH
6800 W 115th St, Suite 2292
OVERLAND PARK, KS 66211
(913) 458-2000

PROJECT NO:	192745
DRAWN BY:	PRP
CHECKED BY:	CNS

REV	DATE	DESCRIPTION
3	04/09/18	ISSUED FOR CONSTRUCTION
2	11/13/17	REISSUED FOR PERMITTING
1	10/17/17	REISSUED FOR PERMITTING
0	09/27/17	ISSUED FOR PERMITTING

COMMONWEALTH OF MASSACHUSETTS
CHRISTOPHER M. ZERR
No.53013
REGISTERED PROFESSIONAL ENGINEER
04/09/2018

MA011_CHESTNUT HILL
CHESTNUT HILL
49 BOLYSTON ST
CHESTNUT HILL, MA 02647

SHEET TITLE
INSTALLATION DETAILS

SHEET NUMBER
D-2

GENERAL CONSTRUCTION NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY
   GENERAL CONTRACTOR: OVERLAND CONTRACTING INC. (BLACK & VEATCH)
   CONTRACTOR: (CONSTRUCTION)
   OWNER: TESLA
2. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS.
3. THE GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
4. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
5. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.
10. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.
11. THE GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
12. CONSTRUCTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE.
13. WORK PREVIOUSLY COMPLETED IS REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
14. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
15. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
16. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
17. THE GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.
18. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.
19. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.
20. THE CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A:10-B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.
21. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. THE CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.

GENERAL CONSTRUCTION NOTES CONT.

22. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
23. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
24. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.
25. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
26. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE-APPROVED BY THE LOCAL JURISDICTION.
27. ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.
28. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.
29. THE CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
30. THE CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.
31. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).
32. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
33. CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.
34. THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
35. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

ELECTRICAL NOTES

1. THE ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ANY/ALL ELECTRICAL WORK INDICATED. ANY/ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND ANY/ALL APPLICABLE SPECIFICATIONS. IF ANY PROBLEMS ARE ENCOUNTERED BY COMPLYING WITH THESE REQUIREMENTS, CONTRACTOR SHALL NOTIFY 'CONSTRUCTION MANAGER' AS SOON AS POSSIBLE, AFTER THE DISCOVERY OF THE PROBLEMS, AND SHALL NOT PROCEED WITH THAT PORTION OF WORK, UNTIL THE 'CONSTRUCTION MANAGER' HAS DIRECTED THE CORRECTIVE ACTIONS TO BE TAKEN.
2. THE ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE THEMSELVES WITH ANY/ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATION INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. THE CONDITION OF EXISTING ELECTRICAL EQUIP., LIGHT FIXTURES, ETC., THAT ARE PART OF THE FINAL SYSTEM, SHALL BE VERIFIED BY THE CONTRACTOR, PRIOR TO THE SUBMITTAL OF HIS BID. FAILURE TO COMPLY WITH THIS PARAGRAPH WILL IN NO WAY RELIEVE CONTRACTOR OF PERFORMING ALL WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL CODES AND LOCAL ORDINANCES OF THE LOCAL POWER COMPANIES HAVING JURISDICTION AND SHALL INCLUDE BUT NOT BE LIMITED TO:

   A. UL - UNDERWRITERS LABORATORIES
   B. NEC - NATIONAL ELECTRICAL CODE
   C. NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
   D. OSHA - OCCUPATIONAL SAFETY AND HEALTH ACT
   E. SBC - STANDARD BUILDING CODE
   F. NFPA - NATIONAL FIRE PROTECTION ASSOCIATION
4. DO NOT SCALE ELECTRICAL DRAWINGS, REFER TO SITE PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, BUT CONFIRM WITH 'CONSTRUCTION MANAGER' ANY SIZES AND LOCATIONS WHEN NEEDED.
5. EXISTING SERVICES: THE CONTRACTOR SHALL NOT INTERRUPT EXISTING SERVICES WITHOUT WRITTEN PERMISSION OF THE OWNER.
6. THE CONTRACTOR SHALL PAY FOR ANY/ALL PERMITS, FEES, INSPECTIONS AND TESTING. THE CONTRACTOR IS TO OBTAIN PERMITS AND APPROVED SUBMITTALS PRIOR TO THE WORK BEGINNING OR ORDERING THE EQUIPMENT.
7. THE TERM "PROVIDE" USED IN CONSTRUCTION DOCUMENTS AND SPECIFICATIONS, INDICATES THAT THE CONTRACTOR SHALL FURNISH AND INSTALL.

ELECTRICAL NOTES CONT.

8. THE CONTRACTOR SHALL CONFIRM WITH LOCAL UTILITY COMPANY ANY/ALL REQUIREMENTS SUCH AS THE: LUG SIZE RESTRICTIONS, CONDUIT ENTRY, SIZE OF TRANSFORMERS, SCHEDULED DOWNTIME FOR THE OWNERS' CONFIRMATION, ETC. ANY/ALL CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER, PRIOR TO BEGINNING ANY WORK.
9. CONDUCTORS: CONTRACTOR SHALL USE 98% CONDUCTIVITY COPPER OR ALUMINUM WITH TYPE (THWN-2) INSULATION, 600 VOLT, COLOR CODED UNLESS SPECIFIED DIFFERENTLY ON DRAWINGS.
10. ALL (THWN-2) WIRING INSTALLATIONS TO FOLLOW MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
11. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET/DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.
12. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF THE CONSTRUCTION. CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER. CONTRACTOR IS TO PROVIDE ALL ELECTRICAL EQUIPMENT UNLESS OTHERWISE DIRECTED.
13. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS, WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIONAL AND SUBJECT TO REGULATORY INSPECTION AND APPROVAL BY CONSTRUCTION MANAGER.
14. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
15. CONTRACTOR SHALL GUARANTEE ANY/ALL MATERIALS AND WORK FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE.
16. THE CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ANY ADDITIONAL CHARGE AND SHALL INCLUDE THE REPLACEMENT OR THE REPAIR OF ANY OTHER PHASE OF THE INSTALLATION, WHICH MAY HAVE BEEN DAMAGED THEREIN.
17. ADEQUATE AND REQUIRED LIABILITY INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LOSS AND ANY/ALL PROPERTY DAMAGE FOR THE DURATION OF WORK.
18. PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES AND DEVICES FOR ALL OUTLETS AS INDICATED.
19. TRENCHING AND BACKFILL: THE CONTRACTOR SHALL PROVIDE FOR ALL UNDERGROUND INSTALLED CONDUIT AND/OR CABLES INCLUDING EXCAVATION AND BACKFILLING AND COMPACTION. REFER TO GENERAL SITE WORK NOTES.
20. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SHALL APPEAR ON THE LIST OF U.L. APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NEC, NEMA AND IEEE.
21. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR MANUFACTURES CATALOG INFORMATION OF ANY/ALL LIGHTING FIXTURES, SWITCHES AND ALL OTHER ELECTRICAL ITEMS FOR APPROVAL BY THE CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
22. ANY CUTTING OR PATCHING DEEMED NECESSARY FOR ELECTRICAL WORK IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY AND SHALL BE INCLUDED IN THE COST FOR WORK AND PERFORMED TO THE SATISFACTION OF THE 'CONSTRUCTION MANAGER' UPON FINAL ACCEPTANCE.
23. THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS WITH ONLY TYPEWRITTEN DIRECTORIES.
24. DISCONNECT SWITCHES SHALL BE H.P. RATED HEAVY-DUTY, QUICK-MAKE AND QUICK-BREAK ENCLOSURES, AS REQUIRED BY EXPOSURE TYPE.
25. ALL CONNECTIONS EXCEPT THE EV CHARGE CABLE TERMINATION IN THE CHARGE POST SHALL BE MADE WITH A PROTECTIVE COATING OF AN ANTI-OXIDE COMPOUND SUCH AS "NOALOX" BY IDEAL INDUSTIAL INC., COAT ALL WIRE SURFACES BEFORE CONNECTING. EXPOSED ALUMINUM & COPPER SURFACES, INCLUDING GROUND BARS, SHALL BE TREATED - NO SUBSTITUTIONS.
26. ALL EXTERIOR AND INTERIOR ABOVE GROUND CONDUIT SHALL BE RIGID UNLESS SPECIFIED OTHERWISE. ALL BURIED CONDUITS SHALL BE SCH 40 PVC UNLESS SPECIFIED OTHERWISE.
27. RACEWAYS: CONDUIT SHALL BE SCHEDULE 40 PVC, MEETING OR EXCEEDING NEMA TC2 - 1990. THE CONTRACTOR SHALL PLUG AND CAP EACH END OF SPARE AND EMPTY CONDUITS AND PROVIDE TWO SEPARATE PULL STRINGS - 200 LBS TEST POLYETHYLENE CORD. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 3 FT. RADIUS. RGS CONDUITS WHEN SPECIFIED, SHALL MEET UL-6 FOR GALVANIZED STEEL. ALL FITTINGS SHALL BE SUITABLE FOR USE WITH THREADED RIGID CONDUIT. COAT ALL THREADS WITH 'BRITE ZINC' OR 'GOLD GALV'.
28. SUPPORT OF ALL ELECTRICAL WORK SHALL BE AS REQUIRED BY NEC.
29. CONNECTORS FOR POWER CONDUCTORS: CONTRACTOR SHALL USE PRESSURE TYPE INSULATED TWIST-ON CONNECTORS FOR NO. 10 AWG AND SMALLER. USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR NO. 8 AWG AND LARGER.
30. THE CONTRACTOR SHALL PLACE TWO LENGTHS OF WARNING TAPE AT A DEPTH OF 12" BELOW GROUND AND DIRECTLY ABOVE ELECTRICAL SERVICE CONDUITS. CAUTION TAPE TO READ "CAUTION BURIED ELECTRIC".
31. WHEN DIRECTIONAL BORING IS REQUIRED, CONTRACTOR SHALL INSTALL A LOOSE TONING WIRE WITHIN INSTALLED CONDUIT TO ALLOW FOR IDENTIFICATION OF UNDERGROUND CONDUITS.
32. ALL BOLTS SHALL BE STAINLESS STEEL.
33. ALL MATERIALS AND EQUIPMENT SUPPLIED AND INSTALLED BY THE CONTRACTOR SHOULD BE NEW AND UNUSED.

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COMMONWEALTH OF MASSACHUSETTS
CHRISTOPHER M. ZERR
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MA011_CHESTNUT HILL
CHESTNUT HILL
49 BOLYSTON ST
CHESTNUT HILL, MA 02647

SHEET TITLE
GENERAL NOTES 1

SHEET NUMBER
GN-1

REINFORCED CONCRETE NOTES

1. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS UNLESS OTHERWISE NOTED; CONTINUOUS INSPECTION IS NOT REQUIRED.
   SLUMP: 4" MIN./6" MAX.
   AIR ENTRAINMENT: 4 1/2% - 7% BY VOLUME
2. REINFORCEMENT SHALL BE A NEW BILLET STEEL DEFORMED BARS CONFORMING TO ASTM SPECIFICATION A615 GRADE 60. MAXIMUM COARSE AGGREGATE SIZE SHALL BE 3/4".
3. REINFORCEMENT SHALL COMPLY WITH THE LATEST EDITION OF ACI-318 FOR MINIMUM CLEARANCES.
4. ALL EMBEDDED ITEMS SHALL BE SECURELY HELD IN POSITION PRIOR TO PLACEMENT OF CONCRETE. ALL CONCRETE SHALL BE READY-MIXED IN ACCORDANCE WITH ASTM C94.
5. MAINTAIN TEMPERATURE OF CAST IN PLACE CONCRETE BETWEEN 50 DEGREES AND 90 DEGREES FAHRENHEIT.
6. DO NOT USE RETEMPERED CONCRETE, OR ADD WATER TO READY-MIX CONCRETE AT THE JOB SITE.
7. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
8. EXCEPT AS DETAILED OR AUTHORIZED. MAKE BARS CONTINUOUS AROUND CORNERS. WHERE PERMITTED, SPLICES MADE BY CONTACT LAPS SHALL BE CLASS "B" TENSION LAPS UNLESS NOTED OTHERWISE.
9. DETAIL BARS IN ACCORDANCE WITH "ACI DETAILING MANUAL - 2004, PUBLICATION SP-66" AND "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", ACI 318, LATEST EDITION.
10. PROVIDE ACCESSORIES NECESSARY TO PROPERLY SUPPORT REINFORCING.
11. THE PROPOSED PRE-CAST FOUNDATION AND ANCHORAGE IS DESIGNED AND SUPPLIED BY TESLA. THESE DRAWINGS WERE CREATED BASED ON THE ASSUMPTION THAT THE PROPOSED FOUNDATION AND ANCHORAGE HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED EQUIPMENT IN CONFORMANCE WITH LOCAL JURISDICTIONAL REQUIREMENTS.

GENERAL SITE WORK NOTES

PART 1 - GENERAL

CLEARING, GRUBBING, STRIPPING, EROSION CONTROL, SURVEY, LAYOUT, SUBGRADE PREPARATION AND FINISH GRADING AS REQUIRED TO COMPLETE THE PROPOSED WORK SHOWN IN THESE PLANS.

1.1 REFERENCES:

A. DOT (STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION-CURRENT EDITION).

B. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS).

C. OSHA (OCCUPATION SAFETY AND HEALTH ADMINISTRATION).

1.2 INSPECTION AND TESTING:

A. GENERAL CONTRACTOR SHALL PERFORM ALL WORK IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. PERFORM INSPECTIONS BEFORE CONCEALING WORK WITH FOLLOW-ON ACTIVITIES (BACKFILL, CONCRETE POUR, ETC).

1.3 SITE MAINTENANCE AND PROTECTION:

A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE CONTRACT.

B. AVOID DAMAGE TO THE SITE AND TO EXISTING FACILITIES, STRUCTURES, TREES, AND SHRUBS DESIGNATED TO REMAIN. TAKE PROTECTIVE MEASURES TO PREVENT EXISTING FACILITIES THAT ARE NOT DESIGNATED FOR REMOVAL FROM BEING DAMAGED BY THE WORK.

C. KEEP SITE FREE OF ALL PONDING WATER.

D. PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH STATE DOT, LOCAL PERMITTING AGENCY AND EPA REQUIREMENTS.

E. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT AGAINST THEFT FROM PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.

F. EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY THE CONSTRUCTION MANAGER AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.

G. PROVIDE A MINIMUM 48-HOUR NOTICE TO THE CONSTRUCTION MANAGER AND RECEIVE WRITTEN NOTICE TO PROCEED BEFORE INTERRUPTING ANY UTILITY SERVICE.

H. SOD PLANTED IN THE FALL MUST ESTABLISH ITS ROOTS BEFORE THE FIRST WINTER FROST. DETERMINE WHEN THE FIRST FROST USUALLY OCCURS, AND PLANT THE SOD NO LATER THAN ONE MONTH BEFORE THE FIRST FROST. IF THE CONSTRUCTION IS FINISHED LATER THAN ONE MONTH BEFORE THE FIRST FROST, USE STRAW UNTIL SOD CAN BE INSTALLED.

GENERAL SITE WORK NOTES CONT.

PART 2 - PRODUCTS

2.1 GRANULAR BACKFILL: SHALL MEET THE FOLLOWING GRADATION:

SIEVE SIZE	TOTAL PERCENT PASSING
1 1/2 INCH (37.5 MM)	100
1 INCH (25.0 MM)	75 TO 100
3/4 INCH (19.0 MM)	80 TO 100
3/8 INCH (9.5 MM)	35 TO 75
NO. 4 (4.75 MM)	30 TO 60
NO. 30 (0.600 MM)	7 TO 30
NO 200 (0.075 MM)	3 TO 15

2.2 GRANULAR BEDDING AND TRENCH BACKFILL: WELL-GRADED SAND MEETING THE GRADATION REQUIREMENTS OF ASTM D2487 (SE OR SW-SM).

2.3 COARSE AGGREGATE FOR ACCESS ROAD SUBBASE COURSE SHALL CONFORM TO ASTM D2940.

2.4 UNSUITABLE MATERIAL: HIGH AND MODERATELY PLASTIC SILTS AND CLAYS (LL>45). MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3 INCHES IN ANY DIMENSION, AND DEBRIS AS DETERMINED BY THE CONSTRUCTION MANAGER. TYPICAL THESE WILL BE SOILS CLASSIFIED BY ASTM AS PT, MH, CH, OH, ML, AND OL.

PART 3 - EXECUTION

3.1 GENERAL:

A. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES, INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH CONDITION THAT IN THE EVENT OF RAIN THE SITE WILL BE DRAINED AT ALL TIMES.

B. BEFORE ALL SURVEY, LAYOUT, STAKING, AND MARKING, ESTABLISH AND MAINTAIN ALL LINES, GRADES, ELEVATIONS AND BENCHMARKS NEEDED FOR EXECUTION OF THE WORK.

C. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE. REMOVE TREES, BRUSH, STUMPS, RUBBISH AND OTHER DEBRIS AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE SITE AREA TO BE CLEARED.

D. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE ORIGINAL GROUND SURFACE: ROOTS, STUMPS, AND OTHER DEBRIS, BRUSH, AND REFUSE EMBEDDED IN OR PROTRUDING THROUGH THE GROUND SURFACE, RAKE, DISK OR PLOW THE AREA TO A DEPTH OF NO LESS THAN 6 INCHES, AND REMOVE TO A DEPTH OF 12 INCHES ALL ROOTS AND OTHER DEBRIS THEREBY EXPOSED.

E. REMOVE TOPSOIL MATERIAL COMPLETELY FROM THE SURFACE UNTIL THE SOIL NO LONGER MEETS THE DEFINITION OF TOPSOIL. AVOID MIXING TOPSOIL WITH SUBSOIL OR OTHER UNDESIRABLE MATERIALS.

F. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING AND DEMOLITION WORK COMPLETELY WITH SUITABLE FILL.

G. REMOVE FROM THE SITE AND DISPOSE IN AN AUTHORIZED LANDFILL ALL DEBRIS RESULTING FROM CLEARING AND GRUBBING OPERATIONS. BURNING WILL NOT BE PERMITTED.

H. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE THE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE AND LOCATION OF ANY STRUCTURE, UNDERGROUND STRUCTURE, OR OTHER ITEM NOT SHOWN THAT MIGHT INTERFERE WITH THE PROPOSED CONSTRUCTION. NOTIFY THE CONSTRUCTION MANAGER OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE DRAWINGS.

I. SEPARATE AND STOCK PILE ALL EXCAVATED MATERIALS SUITABLE FOR BACKFILL. ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF-SITE IN A LEGAL MANNER.

J. DURING EXCAVATION, THE CONTRACTOR SHALL PROVIDE SHORING, SHEETING, AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF EXCAVATION.

3.2 BACKFILL:

A. AS SOON AS PRACTICAL, AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST-IN-PLACE CONCRETE, BACKFILL THE EXCAVATION WITH APPROVED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.

B. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL BE REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.

C. DO NOT PLACE FROZEN MATERIAL IN AS BACKFILL.

GENERAL SITE WORK NOTES CONT.

D. BACKFILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL WHEN REQUIRED IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 8-INCHES LOOSE THICKNESS AND COMPACTED. WHERE HAND OPERATED COMPACTORS ARE USED, THE FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 4 INCHES IN LOOSE DEPTH AND COMPACTED.

E. WHENEVER THE DENSITY TESTING INDICATES THAT THE CONTRACTOR HAS NOT OBTAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE CONSTRUCTION MANAGER. THE CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DISKING AND DRYING, ADDING WATER, OR INCREASING THE COMPACTIVE EFFORT TO MEET THE MINIMUM COMPACTION REQUIREMENTS.

F. THOROUGHLY COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.

3.3 TRENCH EXCAVATION:

A. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE GENERAL CONTRACTOR. PROVIDE SHORING, SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.

B. EXTEND THE TRENCH WIDTH A MINIMUM OF 6 INCHES BEYOND THE OUTSIDE EDGE OF THE OUTERMOST CONDUIT.

C. WHEN SOFT YIELDING, OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, EXCAVATE THE REQUIRED TRENCH TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE REQUIRED ELEVATION, THEN BACKFILL WITH 12" OF GRANULAR BEDDING MATERIAL.

3.4 TRENCH BACKFILL:

A. PROVIDE GRANULAR BEDDING MATERIAL IN ACCORDANCE WITH THE DRAWINGS AND THE UTILITY REQUIREMENTS.

B. NOTIFY THE GENERAL CONTRACTOR 24 HOURS IN ADVANCE OF BACKFILLING.

C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.

D. PLACE GRANULAR TRENCH BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6-INCH UNCOMPACTED LIFTS UNTIL 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACE AROUND CONDUITS.

E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.

F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT SATISFACTORY BACKFILL MATERIAL IN 8-INCH MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.

G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN THAT OF THE EXISTING UNDISTURBED MATERIAL IMMEDIATELY ADJACENT TO THE TRENCH BUT NO LESS THAN A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.

3.5 FINISH GRADING:

A. PERFORM ALL GRADING TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND SMOOTH, EVEN SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL BE COMPATIBLE WITH ALL SURROUNDING TOPOGRAPHY AND STRUCTURES.

B. UTILIZE SATISFACTORY FILL MATERIAL RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.

C. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL CONDITION.

3.6 ASPHALT PAVING ROAD:

MASSACHUSETTS STANDARD SPECIFICATIONS

DIVISION 3 - MASSDOT ASPHALT

A. CONTRACTOR RESPONSIBLE FOR RE-STRIPING AND APPLYING SEALCOATING, UNLESS OTHERWISE SPECIFIED.

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PALO ALTO, CA 94304
(650) 681-5000

BLACK & VEATCH
6800 W 115th St, Suite 2292
OVERLAND PARK, KS 66211
(913) 458-2000

PROJECT NO:	192745
DRAWN BY:	PRP
CHECKED BY:	CNS

REV	DATE	DESCRIPTION
3	04/09/18	ISSUED FOR CONSTRUCTION
2	11/13/17	REISSUED FOR PERMITTING
1	10/17/17	REISSUED FOR PERMITTING
0	09/27/17	ISSUED FOR PERMITTING

COMMONWEALTH OF MASSACHUSETTS
CHRISTOPHER M. ZERR
No.53013
REGISTERED PROFESSIONAL ENGINEER
04/09/2018

MA011_CHESTNUT HILL
CHESTNUT HILL
49 BOLYSTON ST
CHESTNUT HILL, MA 02647

SHEET TITLE
GENERAL NOTES 2

SHEET NUMBER
GN-2

FULL DEPTH ASPHALT DESIGN : MATERIAL AND CONSTRUCTION NOTES

MATERIALS

1. CRUSHED AGGREGATE BASE COURSE SHALL BE ANGULAR CRUSHED STONE OR CRUSHED GRAVEL MEETING THE SPECIFICATION FOR [DOT BASE COURSE] [IF USED].
2. ASPHALT BINDER SHALL BE AASHTO MP 1, PERFORMANCE GRADED BINDER PG 64-22 [MAY BE VARIED FOR IN DIFFERENT AREAS OF COUNTRY].
3. HOT MIX ASPHALT (HMA) BASE COURSE SHALL HAVE A NOMINAL AGGREGATE SIZE OF 0.75 INCH WITH VOIDS IN THE MINERAL AGGREGATE (VMA) OF 12 PERCENT.
4. HOT MIX ASPHALT SURFACE COURSE SHALL HAVE A NOMINAL AGGREGATE SIZE OF 0.38 INCH WITH A VMA OF 14 PERCENT.

CONSTRUCTION

1. PROOFROLL SUBGRADE WITH HEAVY CONSTRUCTION EQUIPMENT TO LOCATE UNSTABLE AREAS. REMOVE SOFT, WET, OR OTHERWISE UNSTABLE AREAS AND REPLACE WITH COMPACTED FILL.
2. COMPACT PAVEMENT SUBGRADE TO A MINIMUM DENSITY OF 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-698.
3. GRADE SUBGRADE TO LINES AND GRADES SHOWN ON THE DRAWINGS AND REMOVE LOOSE OR DELETERIOUS MATERIAL.
4. A. APPLY TACK COAT TO SUBGRADE [THIS IS FOR FULL DEPTH ASPHALT].
   OR
   B. PLACE CRUSHED AGGREGATE BASE COURSE TO THE THICKNESS SHOWN. GRADE AND COMPACT BASE COURSE TO A MINIMUM DENSITY OF 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-698.
5. PLACE HMA COURSE MIXES TO THE THICKNESS SHOWN ON THE DRAWINGS. MACHINE PLACE THE HMA MIXES, SPREAD UNIFORMLY, COMPACT TO 92 PERCENT OF THE THEORETICAL DENSITY IN ACCORDANCE WITH ASTM D-2041.

TYPICAL THICKNESS WILL BE EITHER

A. FULL DEPTH ASPHALT = 4.5-INCH HMA BASE COURSE AND 2.0-INCH HMA SURFACE COURSE
B. WITH AGGREGATE BASE = 6-INCH CRUSHED AGGREGATE BASE, 2-INCH HMA BASE COURSE, AND 2-INCH OF HMA SURFACE COURSE.

STRUCTURAL STEEL NOTES

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS, UNLESS NOTED OTHERWISE: WIDE FLANGE SHAPE: A992, 50ksi
   ANGLE AND CHANNEL SHAPE: ASTM A36, 36 ksi
   PLATE: ASTM A36, 36ksi
   PIPE: ASTM A53 GRADE B, 35 ksi
   HSS: ASTM A500 GRADE B, 46ksi
2. HIGH-STRENGTH BOLTS SHALL CONFORM TO ASTM A325: ONE HIGH-STRENGTH BOLT ASSEMBLY SHALL CONSIST OF A HEAVY HEX STRUCTURAL BOLT, A HEAVY NUT, A HARDENED WASHER CONFORMING TO ASTM F436. THE HARDENED WASHER SHALL BE INSTALLED AGAINST ELEMENT TURNED IN TIGHTENING. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL CONNECTIONS SHALL BE BEARING TYPE CONNECTIONS.
3. WELDING ELECTRODES SHALL COMPLY WITH AWS D1.1 USING A5.1 OR A5.5 E70XX AND SHALL BE COMPATIBLE WITH THE WELDING PROCESS SELECTED. WELDERS SHALL BE QUALIFIED AS PRESCRIBED IN AWS D1.1.
4. UNLESS NOTED OTHERWISE ON THE DRAWING, ALL ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 WITH HEAVY HEXAGONAL NUT.
5. FABRICATE ITEMS OF STRUCTURAL STEEL IN ACCORDANCE WITH AISC SPECIFICATION.
6. ALL EXPOSED STRUCTURAL STEEL AND BOLTS SHALL BE HOT DIP GALVANIZED PER ASTM A123.
7. SUBMIT FABRICATION AND ERECTION DRAWINGS SHOWING ALL DETAILS, CONNECTIONS, MATERIAL DESIGNATIONS, AND TOP STEEL ELEVATIONS FOR APPROVAL. THE SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL CONFORMANCE TO THE CONTRACT DRAWINGS. SUCH APPROVAL SHALL NOT RELIEVE THE FABRICATOR/CONTRACTOR OF THE RESPONSIBILITY FOR EITHER THE ACCURACY OF THE DETAILED DIMENSIONS IN THE SHOP AND ERECTION DRAWINGS OR THE GENERAL FIT-UP OF PARTS THAT ARE TO BE ASSEMBLED IN THE FIELD.
8. PRIMER SHALL BE RED OXIDE-CHROMATE PRIME COMPLYING WITH STEEL STRUCTURES PAINTING COUNCIL (SSPC) PAINT SPECIFICATION NUMBER 11

CONCRETE MASONRY NOTES

1. CONCRETE MASONRY UNITS SHALL BE MEDIUM WEIGHT UNITS CONFORMING TO ASTM C90, GRADE N-1, (F'M=1,500 PSI). MEDIUM WEIGHT. (115 PCF)
2. MORTAR SHALL BE TYPE "S" ABOVE GRADE, TYPE "M" BELOW GRADE CONFORMING TO ASTM C270. (MINIMUM 1,800 PSI AT 28 DAYS)
3. GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS CONFORMING TO ASTM C476.
4. ALL CELLS CONTAINING REINFORCING STEEL OR EMBEDDED ITEMS AND ALL CELLS IN RETAINING WALLS AND WALLS BELOW GRADE SHALL BE SOLID GROUTED.
5. ALL HORIZONTAL REINFORCEMENT SHALL BE PLACED IN BOND BEAM OR LINTEL BEAM UNITS.
6. WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE GROUT POUR 1-1/2" BELOW TOP OF THE UPPERMOST UNIT.
7. ALL BOND BEAM BLOCK SHALL BE "DEEP CUT" UNITS.
8. PROVIDE INSPECTION AND CLEAN-OUT HOLES AT BASE OF VERTICAL CELLS HAVING GROUT LIFTS IN EXCESS OF 4'-0" OF HEIGHT.
9. ALL GROUT SHALL BE CONSOLIDATED WITH A MECHANICAL VIBRATOR.
10. CEMENT SHALL BE AS SPECIFIED FOR CONCRETE.
11. REINFORCING BARS - SEE NOTES UNDER "REINFORCED CONCRETE NOTES" FOR REQUIREMENTS. REINFORCEMENT SHALL BE PLACED PRIOR TO GROUTING. LAP SPLICES SHALL BE 48 BAR DIAMETERS, MINIMUM.
12. PROVIDE ONE BAR DIAMETER (A MINIMUM OF 1/2") GROUT BETWEEN MAIN REINFORCING AND MASONRY UNITS.
13. LOW LIFT CONSTRUCTION, MAXIMUM GROUT POUR HEIGHT IS 4 FEET.
14. HIGH LIFT GROUTED CONSTRUCTION MAY BE USED IN CONFORMANCE WITH PROJECT SPECIFICATIONS AND SECTION 2104 OF IBC.
15. ALL CELLS IN CONCRETE BLOCKS SHALL BE FILLED SOLID WITH GROUT, EXCEPT AS NOTED IN THE DRAWINGS OR SPECIFICATIONS.
16. CELLS SHALL BE IN VERTICAL ALIGNMENT, DOWELS IN FOOTINGS SHALL BE SET TO ALIGN WITH CELLS CONTAINING REINFORCING STEEL.
17. REFER TO DRAWINGS FOR SURFACE AND HEIGHT OF UNITS, LAYING PATTERN AND JOINT TYPE.
18. SAND SHALL BE CLEAN, SHARP AND WELL GRADED, FREE FROM INJURIOUS AMOUNTS OF DUST, LUMPS, SHALE, ALKALI OR ORGANIC MATERIAL.
19. ALL MORTAR FIN OBSTRUCTIONS AND DEBRIS SHALL BE CLEANED FROM INSIDE OF CELLS PRIOR TO GROUTING.

CONCRETE SIDEWALK CONSTRUCTION REQUIREMENTS

1. PLACING AND FINISHING CONCRETE
   THE CONTRACTOR SHALL PROVIDE ADEQUATE TOOLS AND EQUIPMENT TO PRODUCE QUALITY WORKMANSHIP IN PLACING AND FINISHING CONCRETE. THE SIDEWALK AND RAMPS SHALL BE FINISHED TO THE TOP OF THE FORMS AND THE SURFACE FINISHED WITH A WOOD OR STEEL FLOAT AND SURFACE TEXTURE SHALL BE A COURSE BROOM FINISH TRANSVERSE TO THE SLOPE OF THE SIDEWALK OR RAMP. NO “PLASTERING” OF THE SURFACE SHALL BE PERMITTED.
2. CONTRACTION JOINTS
   THE SIDEWALK SURFACE SHALL BE MARKED OFF INTO NOMINAL SQUARES OF DIMENSIONS EQUAL TO THE WIDTH OF THE SIDEWALK WITH A MAXIMUM DISTANCE BETWEEN JOINTS OF SEVEN FEET. SAWING JOINTS, THE CONTRACTOR SHALL BEGIN AS SOON AS THE CONCRETE HARDENS SUFFICIENTLY TO PREVENT EXCESSIVE RAVELING ALONG THE SAW CUT AND SHALL FINISH BEFORE CONDITIONS INDUCE UNCONTROLLED CRACKS, REGARDLESS OF THE TIME OR WEATHER.
3. EXPANSION JOINTS
   EXPANSION JOINTS SHALL BE CONSTRUCTED AT LOCATIONS WHERE THE SIDEWALK ABUTS EXISTING CONCRETE CURBS, DRIVEWAYS, AND SIMILAR STRUCTURES, AND EVERY TWO HUNDRED FIFTY FEET AND AS SHOWN ON APPROVED PLANS. EXPANSION JOINTS SHALL BE FORMED WITH ONE-HALF INCH PREFABRICATED NON-EXTRUDING FILLER AND SHALL EXTEND THE FULL DEPTH OF THE SLAB.

SUPERCHARGER CABINET NOTE

1. PER NEC 625.22 - THE USER INTERFACE (CHARGE POST) IS CONTROLLED BY THE ELECTRICAL EQUIPMENT (SUPERCHARGER CABINET) AND THE FOLLOWING PRECAUTIONS HAVE BEEN TAKEN TO ENSURE THE SAFETY OF CUSTOMERS AND THOSE AROUND THE EQUIPMENT. BEFORE ANY VOLTAGE OR CURRENT IS APPLIED TO THE CHARGE POST, THE CABINET MUST COMMUNICATE WITH THE TESLA VEHICLE. THERE IS A 'HANDSHAKE' BETWEEN THE CAR AND THE CABINET CONFIRMING THAT THE VEHICLE IS ACTUALLY A TESLA AND THAT THE VEHICLE CAN HANDLE THE SUPERCHARGING. VOLTAGE IS THEN APPLIED TO THE POWER SOCKETS IN THE CHARGE POST AND ONCE THE VOLTAGE READING FROM THE CAR IS VERIFIED AS THE SAME IN THE CHARGING CABINET, THEN CURRENT BEGINS TO FLOW. IF AT ANY POINT IN THIS PROCESS A FAULT IS DETECTED, THE CHARGING WILL STOP IMMEDIATELY, WITHIN A MATTER OF MILLISECONDS. DURING THE NORMAL CHARGING CYCLE, IF ANY FAULT OR IRREGULARITY IS DETECTED, THE CHARGING WILL AGAIN STOP WITHIN MILLISECONDS OF DETECTION. BEYOND THIS LOGIC PROTECTION, THERE IS PHYSICAL PROTECTION FROM OVER-CURRENT OR OVER-VOLTAGE WITHIN EACH OF THE CHARGERS. BEYOND THAT, FAST ACTING FUSES ALSO PROTECT THE VEHICLE OUTPUTS FROM OUTPUTTING TOO HIGH OF A CURRENT.

SIGN POST NOTES

1. ACCEPTABLE COLOR SUBSTITUTIONS:

PAINT COLOR SUBSTITUTIONS	
BRAND	COLOR
PANTONE	COOL GREY #7 #a3a19e
BENJAMIN MOORE	FUSION / Af-675 #a6a3a1
BEHR	EQUINOX FF31-1 #9fa29d
SHERWIN-WILLIAMS	STAMPED CONCRETE - 7655 #a2a29b
VALSPAR	STONE MASON GREY #a19c99

2. OTHER ACCEPTABLE COLORS CAN BE FOUND ON ENCYCOLORPEDIA.COM
3. REFER TO INSTALLATION GUIDE FROM MANUFACTURER.
4. BOTTOM OF ADA PARKING SIGN SHALL BE LOCATED AT A MINIMUM HEIGHT OF 60"
5. D/F NON-ILLUMINATED POLE MOUNT PARKING SIGN FACES AND RETURNS TO BE .090" ALUMINUM PANELS WITH #680-82 RED REFLECTIVE VINYL APPLIED (VERIFY REFLECTIVITY WITH OWNER).
6. LOGO TO BE #280-10 REFLECTIVE WHITE VINYL (VERIFY REFLECTIVITY WITH OWNER).
7. SIGN, SIGN POST, AND SIGN FASTENERS TO BE OWNER PROVIDED AND CONTRACTOR INSTALLED. CONTRACTOR TO PROVIDE SIGN POST FASTENERS IF REQUIRED AND PAINTED TO MATCH.
8. IF PAINT FINISH IS DAMAGED DURING INSTALLATION, CONTRACTOR SHALL REPAINT AS REQUIRED.
9. CONTRACTOR SHALL COORDINATE WITH CITY WHEN SPECIAL JURISDICTIONAL/CITY REQUESTS ARE NECESSARY FOR ANY SIGN POST INSTALLATIONS, I.E. POST MATERIAL, PAINT COLORS, HARDWARE, ETC. CONTRACTOR IS RESPONSIBLE FOR ENSURING CITY APPROVES ALL MATERIALS PRIOR TO INSTALLATION.

GROUNDING NOTES

1. ALL GROUND BARS SHALL HAVE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE."
2. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
3. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUND TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
5. SUPPLIED AND INSTALLED BY CONTRACTOR.
6. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).
7. TESLA CHARGERS HAVE INTERNAL HIGH IMPEDANCE GROUND FAULT PROTECTION (10MΩ).
8. EMC - ELECTROMAGNETIC COMPATIBILITY

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PROJECT NO:	192745
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REV	DATE	DESCRIPTION
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COMMONWEALTH OF MASSACHUSETTS
CHRISTOPHER M. ZERR
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REGISTERED PROFESSIONAL ENGINEER
04/09/2018

MA011_CHESTNUT HILL
CHESTNUT HILL
49 BOLYSTON ST
CHESTNUT HILL, MA 02647

SHEET TITLE
GENERAL NOTES 3

SHEET NUMBER
GN-3

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
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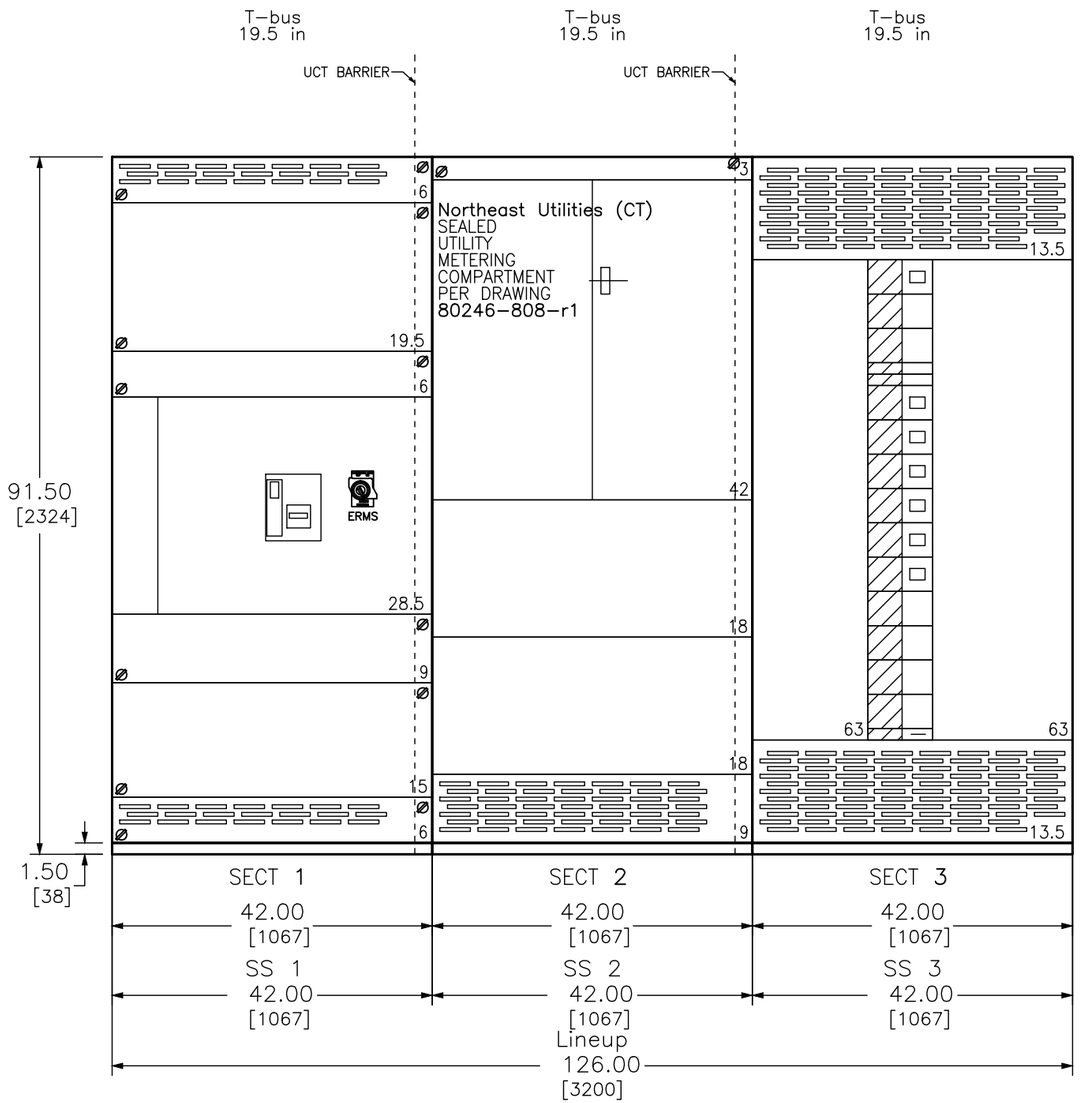

SWITCHBOARD GENERAL NOTES

PRODUCT DESCRIPTION & RATINGS

Power System Data

480Y/277V 3Ph 4W 60Hz / 3 Phase Wye
Solidly Grounded
System Short Circuit Current Rating: 65kA RMS
Incoming Section 1 Cable Through the Bottom Left of Lineup

Bus System Data

1200A Silver Plated Copper Main Bus
(2) .25x1.50 IN/6x38 mm Cu Bus Bar Per Phase/Neutral
(1) .25x.875 IN/6x22 mm Cu Ground Bus

Enclosure Data

Type 3R Free Standing
Exterior Paint Color: ANSI 49
Front Accessibility Only Required
Handling: Rollers
Rodent barriers
1.5H Corrosion Resist Base Channels
Strip Heater w. Thermostat
Utility sealing hardware installed for unmetered bus compartments

Estimated Shipping Weight

Shipping Split 1 853.00 lbs / 386.92 kgs
Shipping Split 2 971.00 lbs / 440.45 kgs
Shipping Split 3 961.00 lbs / 435.91 kgs
Complete Lineup 2785.00 lbs / 1263.28 kgs

Code Standards

U.L. Deadfront and suitable for use as Service Entrance
when not more than six (6) disconnecting means are provided.

Rating Nameplates

ST1– Service Entrance – Section Bus 1200A
ST2– Deadfront – Section Bus 1200A
ST3– Deadfront – Section Bus 1200A

PRODUCT INFORMATION

Wiring

All wiring to be Machine Tool Wire type

Instruction Bulletins

Reference 80043–055 For Handling, Installation,
Anchoring, Inspection And Maintenance Information

Product Accessories/Options

Seismic Qualified
24V Trip Unit Display Power
Locally Mounted ERMS Switch

DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	B&V–TESLA SUPERCHARGERS 8/11/2017	EQUIPMENT DESIGNATION:	**MA011 CHESTNUT HILL**
JOB LOCATION:	EL PASO TX	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	RAFAEL SAUCEDO	DRAWING TYPE:	ELEVATION VIEW
ENGR:	RS		SQUARE D by Schneider Electric
DATE:	AUGUST 18, 2017		
DRAWING STATUS:	RECORD	DWG# **F40296902–002–01**	PG 1 OF 3 REV –

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
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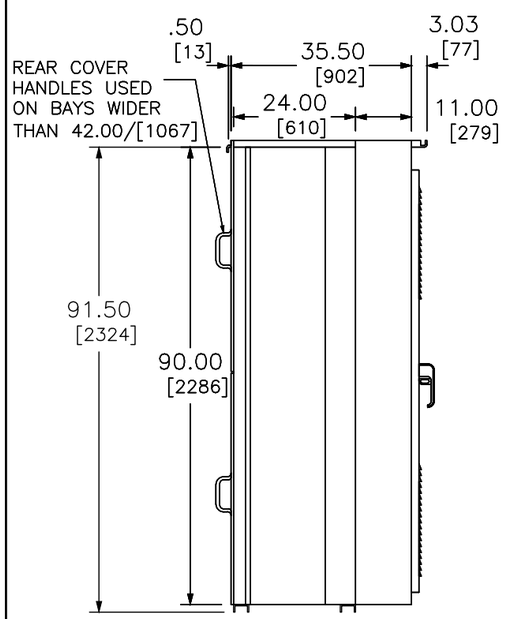
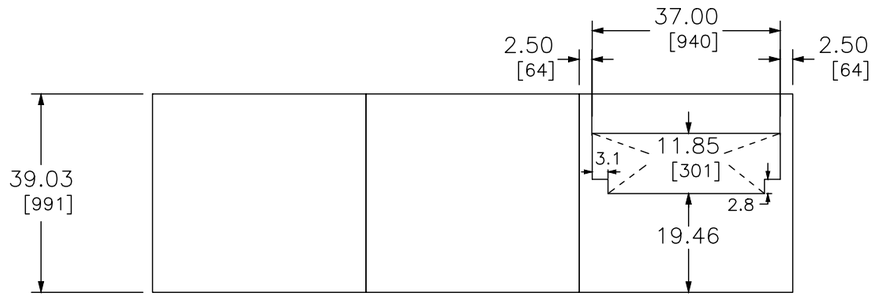
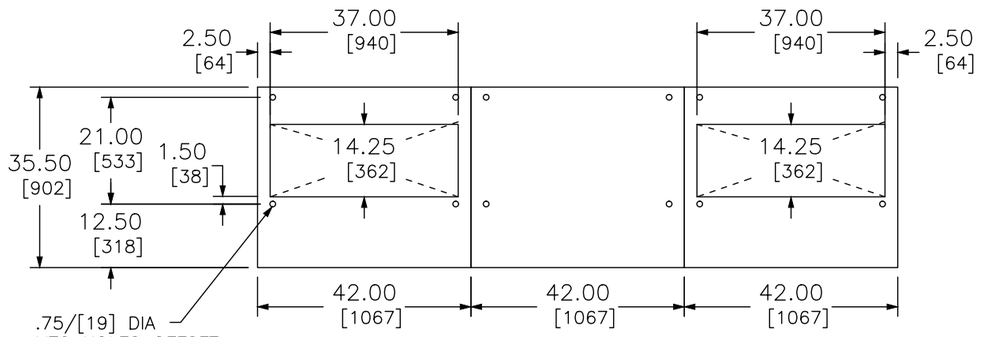


LEFT SIDE VIEW



TOP VIEW – FRONT



FLOOR PLAN – FRONT

NOTE:
A MINIMUM OF 2.00/[51] CLEARANCE BEHIND THE SWITCHBOARD IS REQUIRED FOR TOP COVER OVERHANG.

DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	B&V–TESLA SUPERCHARGERS 8/11/2017	EQUIPMENT DESIGNATION:	**MA011 CHESTNUT HILL**
JOB LOCATION:	EL PASO TX	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	RAFAEL SAUCEDO	DRAWING TYPE:	SIDE, TOP VIEW & FLOOR PLAN
ENGR:	RS		
DATE:	AUGUST 18, 2017		
DRAWING STATUS:	RECORD	DWG#	**F40296902–002–01**

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
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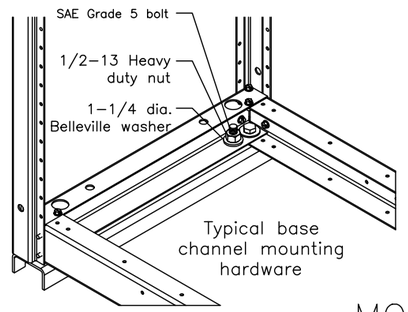
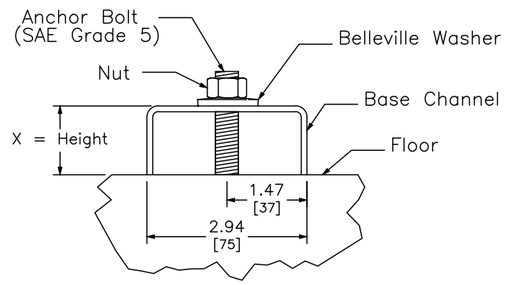
REQUIREMENTS FOR SEISMIC RATING

ANCHORING CONDITIONS:

To Maintain Seismic Qualifications, Equipment Must Be Installed Per Manual (See General Notes) And Per Any Seismic Anchoring Details Provided By Others. Do Not Install Equipment Before Approved Seismic Anchoring Details Have Been Obtained And Site Prepararations Have Been Made In Accordance With The Approved Seismic Anchoring Details. All Post–Installed Anchors Shall Be Approved For Seismic Loads.

Consideration Must Be Made For Conduit Entry Into Each Section When Developing Mounting Pad Reinforcement Locations. See Conduit Entry Details (Floor Plan) For Dimensional Information.





MOUNTING DETAILS

Each Section Must Be Anchored At All Locations (Refer To Floor Plan And Mounting Detail Above). Anchor Bolt Mounting Points Are .75/[19] Diameter Holes Located 1.50/[38] Or 3.00/[76] Above The Base of the Section. Use Dimensions From The Floor Plan To Determine Mounting Locations.

The Belleville Washer (Shown In Detail Above) Used For Anchoring Connections Is A Tested Component And Is Required To Maintain Position Retention Of The Equipment. The Slip Critical Connection Performance Of The Bolted Connection Was Established To The Shake Table Tested Seismic Capacity Of The Equipment As Shown On The Equipment Seismic Certificate Supplied At The Time Of Order.

CENTER OF GRAVITY CALCULATIONS:

Elevation Center Of Gravity: 55 in. (1387.00mm) Up From Floor
Vertical Center Of Gravity: Use Centerline Of Section From Left To Right
Depth Center Of Gravity: Use CenterLine Of The Section From Front To Rear

SECTION WEIGHT:

The Weights Given Below Are The Maximum For Each Section And Should Be Used For Calculating Seismic Anchoring Requirements

Section 1	853.00	lbs /	386.92	kgs
Section 2	971.00	lbs /	440.45	kgs
Section 3	961.00	lbs /	435.91	kgs

DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	B&V–TESLA SUPERCHARGERS 8/11/2017	EQUIPMENT DESIGNATION:	**MA011 CHESTNUT HILL**
JOB LOCATION:	EL PASO TX	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	RAFAEL SAUCEDO	DRAWING TYPE:	CENTER OF GRAVITY
ENGR:	RS		SQUARE D by Schneider Electric
DATE:	AUGUST 18, 2017		
DRAWING STATUS:	RECORD	DWG# **F40296902–002–01**	PG 3 OF 3 REV –

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
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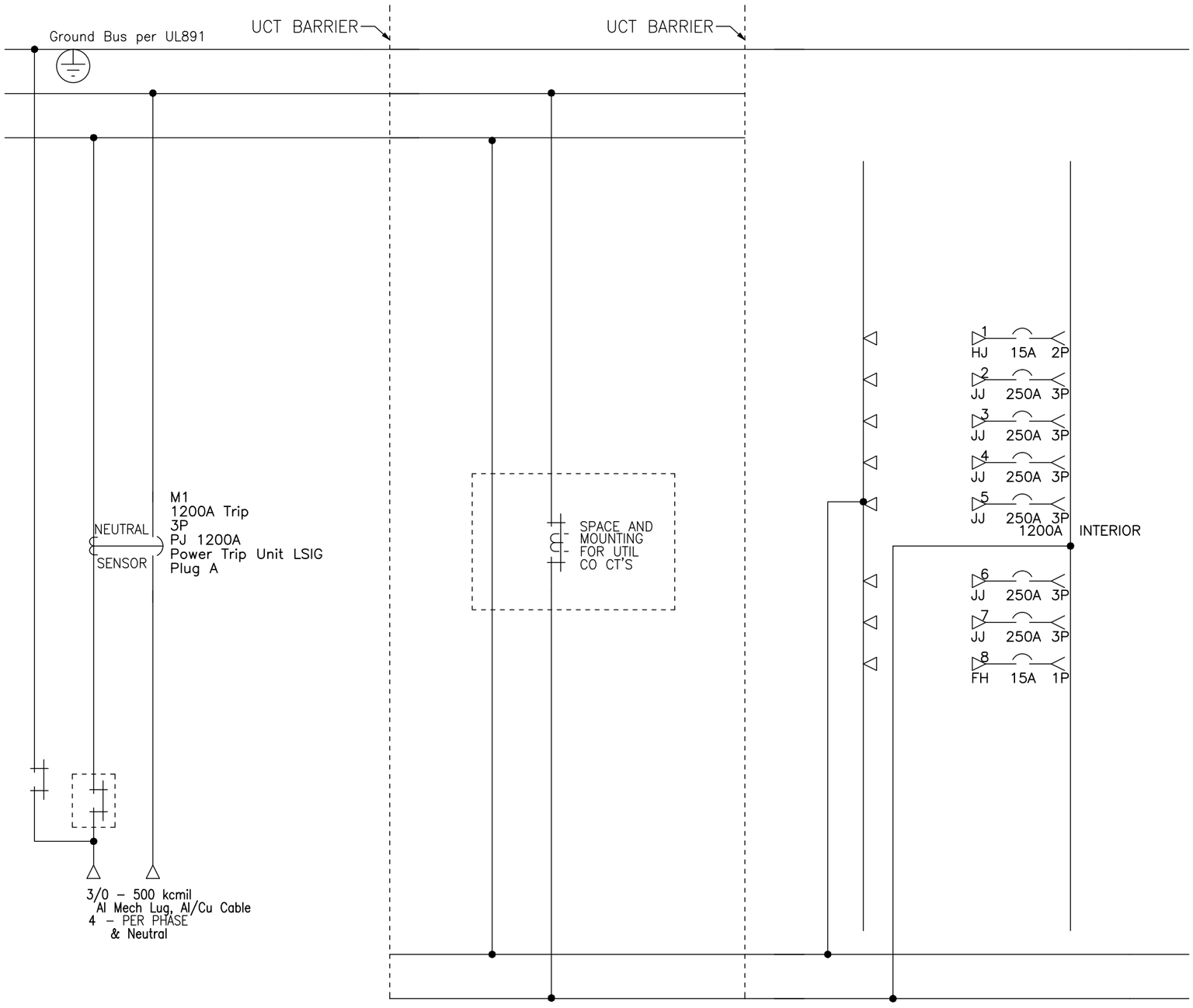


SECTION 1

SECTION 2

SECTION 3

JOB NAME:	B&V–TESLA SUPERCHARGERS 8/11/2017	EQUIPMENT DESIGNATION:	**MA011 CHESTNUT HILL**
JOB LOCATION:	EL PASO TX	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	RAFAEL SAUCEDO	DRAWING TYPE:	ONE LINE
ENGR:	RS		
DATE:	AUGUST 18, 2017		
DRAWING STATUS:	RECORD	DWG# **040296902–002–01**	PG 1 OF 2 REV –

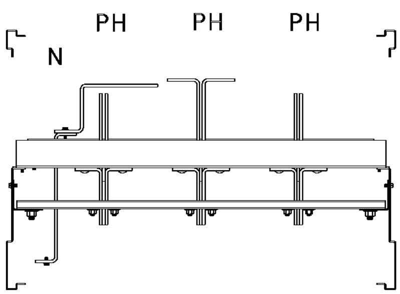
REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
–	----	--	--/--/--	–	----	--	--/--/--	–	----	--	--/--/--

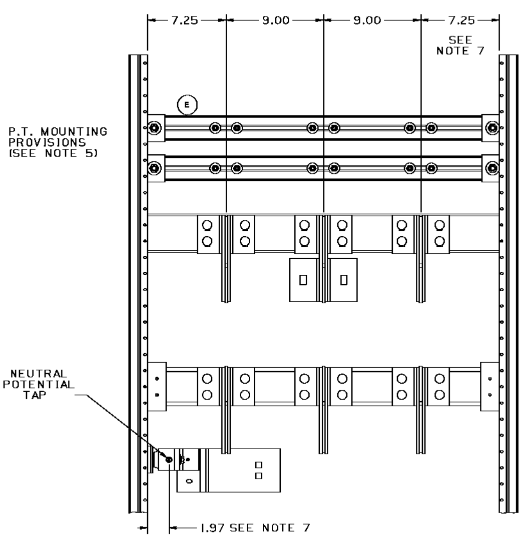
POWER STYLE QED–2 SWITCHBOARD

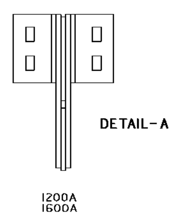
SECT NO	CKT NO	GMD HEIGHT	DEVICE/FRAME RATING	TRIP AMP	FUSE/ TRIP	#P	DESIGNATION	N/P	LUG/WIRE INFORMATION				ACCESSORIES / NOTES
									QTY	PHASE WIRE RANGE	QTY	NEUT WIRE RANGE	
1	M1	–	PJ1200A Plug A 100%	1200A	P–LSIG	3P		No	4	3/0 – 500 kcmil	4	3/0 – 500 kcmil	GF,SDE PLA,ERMS,TU
2	–	–	Strip Heater	–	–	–	–	–	–	–	–	–	SHR
2	UCT	–	1200A	–	–	–	Northeast Utilities (CT)	No	–	–	–	–	
3	–	–	Strip Heater	–	–	–	–	–	–	–	–	–	SHR
3	1	4.5 in	HJ	15A	–	2P		No	1	#14 – 1/0 AWG	1	#14 – 1/0 AWG	
3	2	4.5 in	JJ 250A	250A	S–LI	3P		No	1	3/0 – 350 kcmil	1	3/0 – 350 kcmil	PLA
3	3	4.5 in	JJ 250A	250A	S–LI	3P		No	1	3/0 – 350 kcmil	1	3/0 – 350 kcmil	PLA
3	4	4.5 in	JJ 250A	250A	S–LI	3P		No	1	3/0 – 350 kcmil	1	3/0 – 350 kcmil	PLA
3	5	4.5 in	JJ 250A	250A	S–LI	3P		No	1	3/0 – 350 kcmil	1	3/0 – 350 kcmil	PLA
3	6	4.5 in	JJ 250A	250A	S–LI	3P		No	1	3/0 – 350 kcmil	1	3/0 – 350 kcmil	PLA
3	7	4.5 in	JJ 250A	250A	S–LI	3P		No	1	3/0 – 350 kcmil	1	3/0 – 350 kcmil	PLA
3	8	1.5 in	FH	15A	–	1P		No	1	#12 – #4 AWG	1	#12 – #4 AWG	

LEGEND	
ERMS	Energy Reduction Maintenance SW
GF	Ground Fault
PLA	Padlock Attachment–Fixed
SDE	Over Current Trip Switch
SHR	Strip Heater
TU	24V Trip Unit Display Power

JOB NAME:	B&V–TESLA SUPERCHARGERS 8/11/2017	EQUIPMENT DESIGNATION:	**MA011 CHESTNUT HILL**
JOB LOCATION:	EL PASO TX	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	RAFAEL SAUCEDO	DRAWING TYPE:	SCHEDULE
ENGR:	RS		SQUARE D by Schneider Electric
DATE:	AUGUST 18, 2017		
DRAWING STATUS:	RECORD	DWG# **040296902–002–01**	PG **2** OF **2** REV –

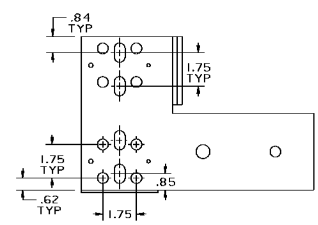




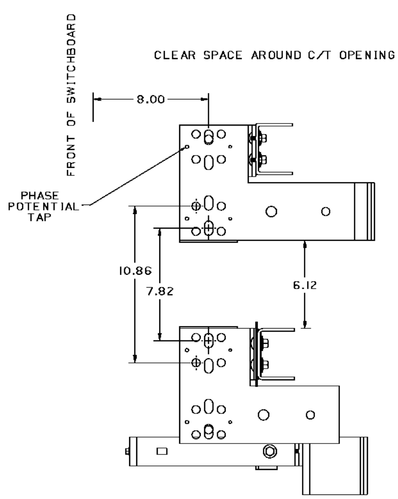


COLD SEQUENCE METERING
ALWAYS FURNISHED

DETAIL-B
NEMA SPACING



CLEAR SPACE AROUND C/T OPENING



NOTES:

1. 36" MIN SECTION WIDTHS.
2. 24" MIN SECTION DEPTH.
3. ALL BUS DETAILS AND SPACINGS ARE 1/4".
4. ALL BOLTS ARE 1/2" DIA.
5. (F) PT MOUNTING PROVISIONS ARE FURNISHED ON VOLTAGE SYSTEMS GREATER THAN 240V. **SUPPLY (2) PT MTG CHANNELS WHEN SYSTEM VOLTAGE IS GREATER THAN 240V.**
6. ALL PHASES AND NEUTRAL PROVIDED WITH 1/4-20 POTENTIAL TAP.
7. DIMENSION TO COMPARTMENT OPENING.
8. COMPARTMENT PROVIDED WITH HINGED DOOR AND SEALING HASP, 7/16 DIA HOLE, SINGLE DOOR-36W, DOUBLE DOOR-OVER 36W.
9. NEUTRAL MAY BE MOUNTED ON THE LEFT OR RIGHT SIDE OF SECTION.
10. ALL COVERS ON LINE SIDE OF UTILITY COMPARTMENT ARE SEALABLE, (SEALABLE SCREWS AND WINGNUTS).
11. SIDE BARRIER REQUIRED BETWEEN ADJACENT SECTION TO ISOLATE COMPARTMENT.
12. HORIZONTAL BARRIER (SHOWN) IS VENTILATED .38 MAX DIA HOLES. HORIZONTAL BARRIER IS NOT REQUIRED ON FULL HEIGHT UTILITY COMPARTMENTS.
13. CT PRIMARY BARS USED ARE (800:5A CT) MOUNT TO EITHER SIDE OF CT BUS.
14. SERVICE DISCONNECT FURNISHED WITH HANDLE PADLOCK PROVISIONS.
15. A GROUND LUG IS FURNISHED ON THE GROUND BUS IN THE SAME SWITCHBOARD AS THE UTILITY COMPARTMENT.

REVISIONS MUST BE APPROVED BY NORTHEAST UTILITIES SYSTEM

REV	ECO/ECS	DATE	BY	REVISION DESCRIPTION
F	08C0179	14MAR2008	dwn	REVISED NOTE 5.

TITLE	1200-1600 CT COMPT NE UTILITIES
	QED SWITCHBOARDS
CLASS	TYPE
FORM	SERIES

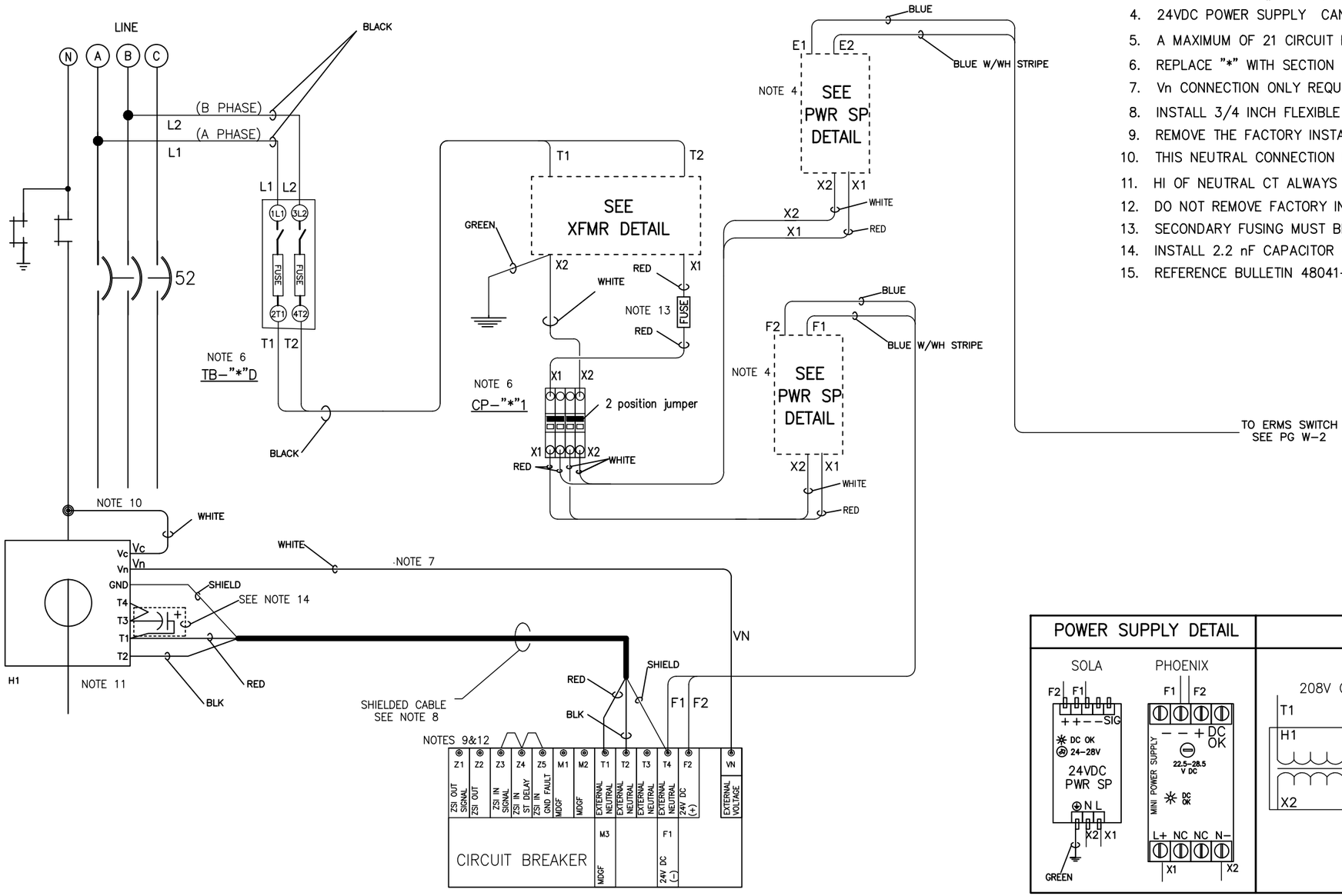
SCALE	DRAWN	CHKD.	DATE	ECO/ECR
CADDS	RRW	JEY	09APR1997	9700490

PRINTS TO: SB

SQUARE D

SIZE	NUMBER	SHEET
D	80246 808 R1	1 OF 1

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
–	----	--	--/--/--	–	----	--	--/--/--	–	----	--	--/--/--

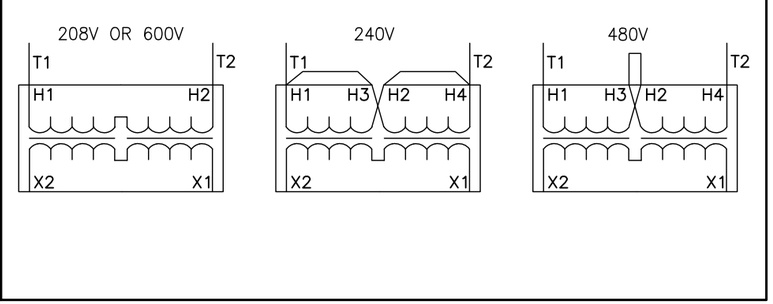


NOTES:

1. REFER TO BREAKER MANUAL FOR COMPLETE BREAKER TERMINAL INFORMATION
2. REFER TO ONELINE/SCHEDULE DRAWING FOR ACCESSORIES PROVIDED.
3. ALL WIRES ARE #16 MTM, UNLESS NOTED OTHERWISE.
4. 24VDC POWER SUPPLY CAN ONLY PROVIDE POWER FOR BREAKER TRIP UNITS.
5. A MAXIMUM OF 21 CIRCUIT BREAKER TRIP UNITS CAN BE CONNECTED TO EACH POWER SUPPLY.
6. REPLACE "*" WITH SECTION NUMBER.
7. Vn CONNECTION ONLY REQUIRED FOR 5.0P,6.0P,5.0H,AND 6.0H TRIP UNITS.
8. INSTALL 3/4 INCH FLEXIBLE CONDUIT AROUND SHIELDED CONDUCTORS.
9. REMOVE THE FACTORY INSTALLED JUMPER BETWEEN T1 & T2 WHEN BREAKER HAS NEUTRAL SENSOR.
10. THIS NEUTRAL CONNECTION IS PROVIDED BY VENDOR.
11. HI OF NEUTRAL CT ALWAYS POINTS TO BOTTOM.
12. DO NOT REMOVE FACTORY INSTALLED Z3–Z4 OR Z3–Z5 JUMPER UNLESS DICTATED BY SYSTEM ZSI WIRING.
13. SECONDARY FUSING MUST BE PROVIDED FOR XFMRS RATED 750VA AND ABOVE.
14. INSTALL 2.2 nF CAPACITOR & JUMPER IF NOT ALREADY PRESENT.
15. REFERENCE BULLETIN 48041–082–XX FOR ADDITIONAL CT CONNECTION INFORMATION.

POWER SUPPLY DETAIL

XFMR DETAIL



PowerPact WITH 2 POLE DISCONNECT/GF/CPT/PS

JOB NAME:	B&V–TESLA SUPERCHARGERS 8/11/2017	EQUIPMENT DESIGNATION:	**MA011 CHESTNUT HILL**
JOB LOCATION:	EL PASO TX	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	RAFAEL SAUCEDO	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	RS		Schneider Electric
DATE:	AUGUST 18, 2017		
DRAWING STATUS:	RECORD	DWG# **W40296902–002–01**	PG 1 OF 3 REV –

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
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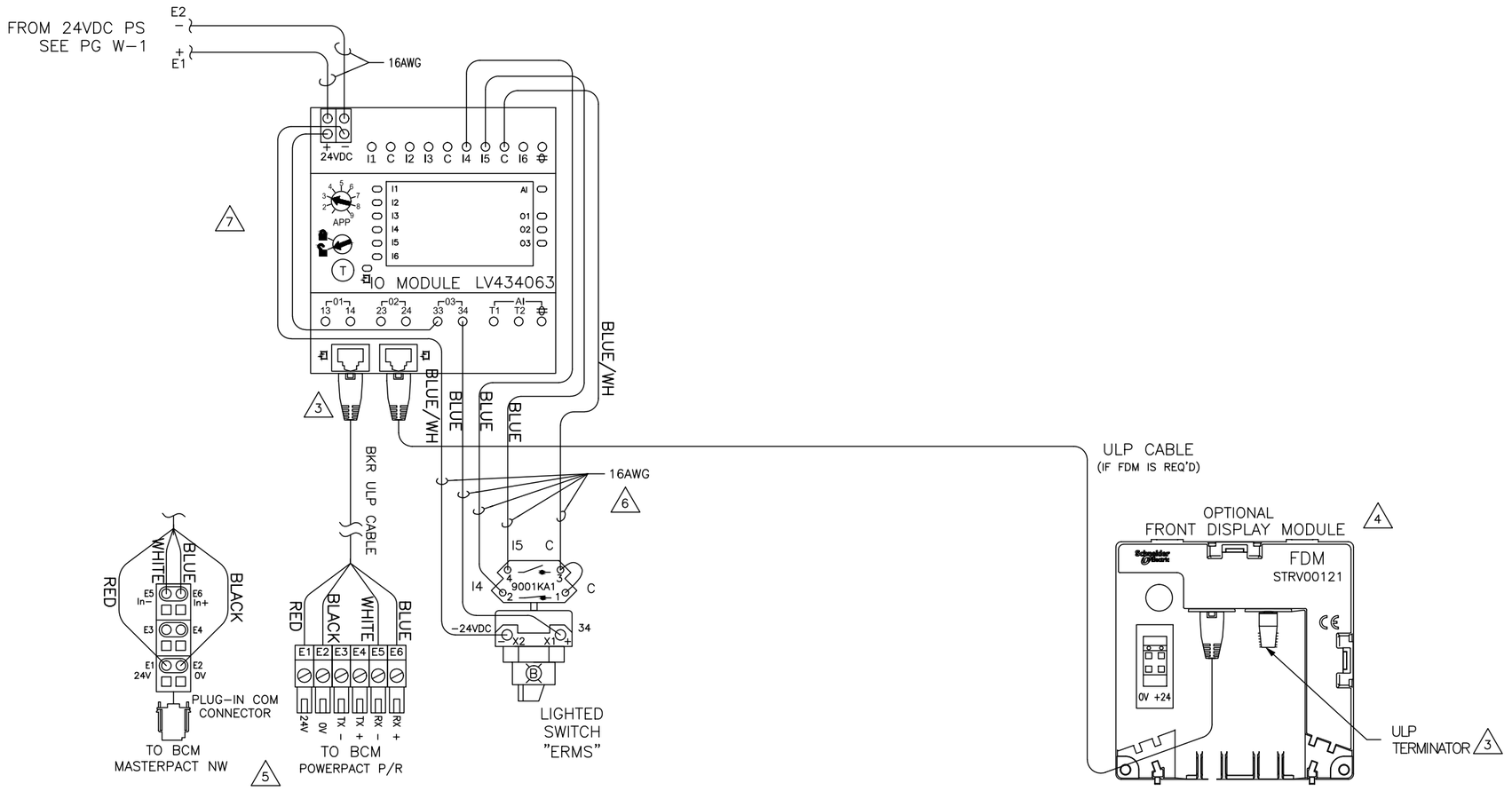

NOTES:

1. 24VDC POWER SUPPLY
   a. POWER FOR TRIP UNITS, I/O MODULE AND ALL OTHER COMMUNICATION DEVICES MUST COME FROM LINE SIDE OF CIRCUIT BREAKER.
   b. THE SAME POWER SUPPLY CAN BE CONNECTED TO THE FOLLOWING DEVICES: FDM, EGX, ETHERNET SWITCH, IFM, IFE AND IO MODULES. ALL OTHER DEVICES MUST BE EVALUATED.
   c. SEPARATE PWR SUPPLY REQ'D FOR TRIP UNITS OR PROGRAMMABLE CONTACT MODULES.
   d. 3A MAX DUE TO DEVICE CONNECTOR LIMITATIONS.
   e. BKR ULP CABLE INCLUDES 24VDC FOR CONNECTED DEVICES.

2. ANSI C37.20.1 OR CSA C22.2 NO. 31 EQUIPMENT
   a. SINGLE CONDUCTOR CABLE MAY BE TYPE SIS AND COLOR CODES MAY BE DISREGARDED (FOR SINGLE CONDUCTORS).

△3 RJ45 PORTS
   a. WHEN OVERALL ULP CABLE LENGTH IS MORE THAN 5 METERS... ALL PORTS MUST BE FILLED WITH A CABLE TO ANOTHER DEVICE, OR ULP LINE TERMINATOR.

△4 FDM (IF PRESENT)
   a. VERIFY CONNECTION WITH CIRCUIT BREAKER BY SELECTING "QUICK VIEW" FROM THE MAIN MENU ON FDM DISPLAY. OPEN & CLOSE BREAKER, CONFIRMING BREAKER STATE CHANGE IN THE UPPER LEFT CORNER OF DISPLAY SCREEN.

△5 TRIP UNIT
   a. MUST BE CONFIGURED AS 2 WIRE MODE.
   b. FOR PREPARED SPACE, INSTALL AND TEST ALL DEVICES. COIL CABLE/WIRES FOR THE CIRCUIT BREAKER WHERE THEY ORIGINATE. UNPLUG THE CABLE FEEDING THE CIRCUIT BREAKER FROM THE I/O MODULE.

△6 LIGHTED SWITCH
   a. IF WIRING TO LIGHTED SWITCH IS 3 FEET OR LONGER, TWISTED PAIR OR SHIELDED CABLE IS REQUIRED.

△7 SET APPLICATION DIAL TO "3" WHEN ERMS IS USED. AFTER POWER IS APPLIED ALL LIGHTS WILL FLASH. HOLD "T" BUTTON FOR 5-15 SECONDS TO RESET.

WD, QED2 PPP/R & NW FIXED IMD ERMS (FDM)

JOB NAME:	B&V-TESLA SUPERCHARGERS 8/11/2017	EQUIPMENT DESIGNATION:	**MA011 CHESTNUT HILL**
JOB LOCATION:	EL PASO TX	EQUIPMENT TYPE:	QED-2 SWITCHBOARD
DRAWN BY:	RAFAEL SAUCEDO	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	RS	Schneider Electric	
DATE:	AUGUST 18, 2017		
DRAWING STATUS:	RECORD	DWG# **W40296902-002-01**	PG **2** OF **7** REV –

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
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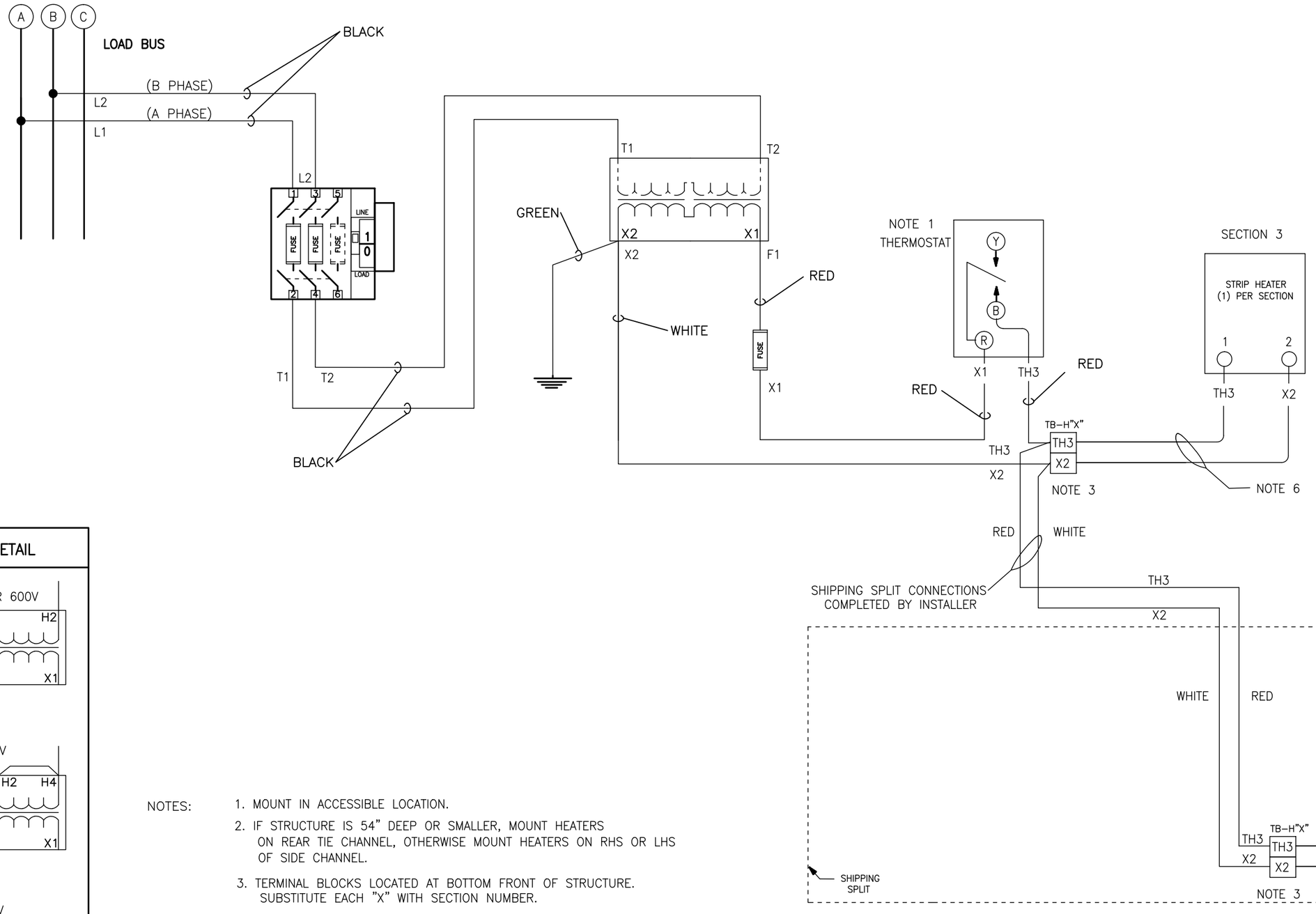
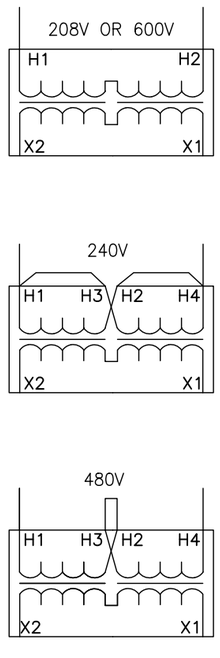


STRIP HEATER W/ TSTAT

XFMR DETAIL

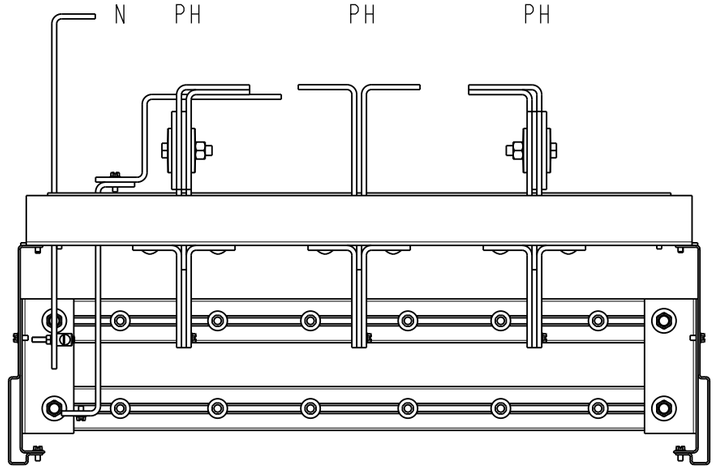


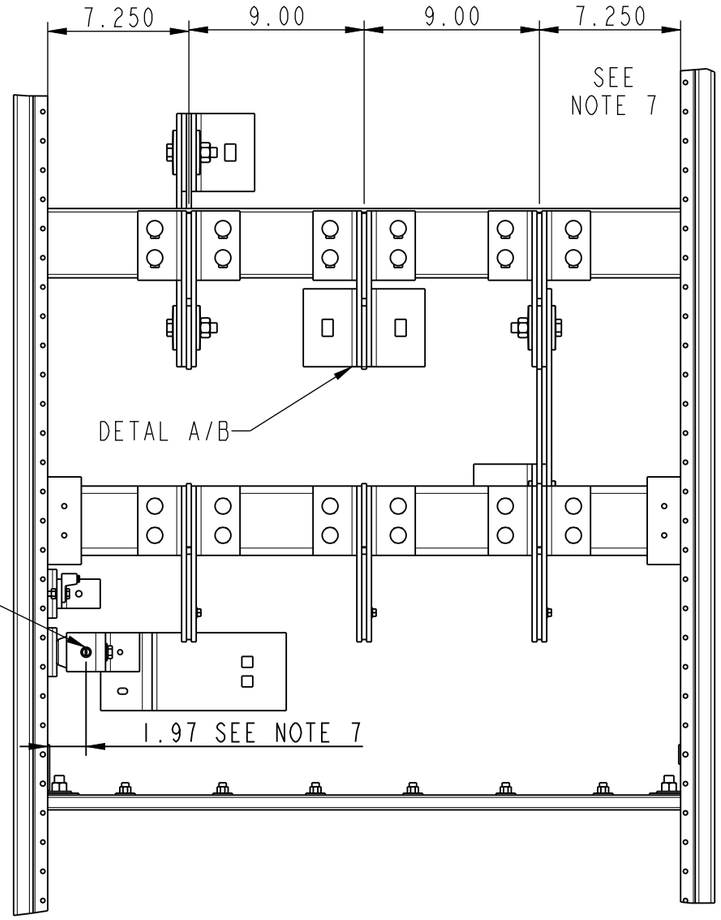
NOTES:

1. MOUNT IN ACCESSIBLE LOCATION.
2. IF STRUCTURE IS 54" DEEP OR SMALLER, MOUNT HEATERS ON REAR TIE CHANNEL, OTHERWISE MOUNT HEATERS ON RHS OR LHS OF SIDE CHANNEL.
3. TERMINAL BLOCKS LOCATED AT BOTTOM FRONT OF STRUCTURE. SUBSTITUTE EACH "X" WITH SECTION NUMBER.
4. GROUND WIRE SHALL BE GREEN.
5. ALL CONDUCTORS TO BE #14 MTW MIN, UNLESS OTHERWISE NOTED.
6. WIRE TO BE AWG #12 MIN. BLACK HIGH TEMPERATURE (1360–026802)

JOB NAME:	B&V–TESLA SUPERCHARGERS 8/11/2017	EQUIPMENT DESIGNATION:	**MA011 CHESTNUT HILL**
JOB LOCATION:	EL PASO TX	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	RAFAEL SAUCEDO	DRAWING TYPE:	WIRING DIAGRAM
ENGR:	RS		Schneider Electric
DATE:	AUGUST 18, 2017		
DRAWING STATUS:	RECORD	DWG#	**W40296902–002–01**

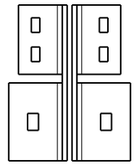
PG 3 OF 3 REV –





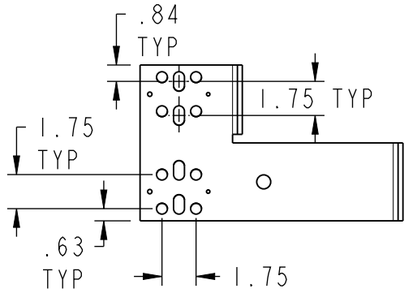
PT MOUNTING PROVISIONS (SEE NOTE 5)

DETAIL A

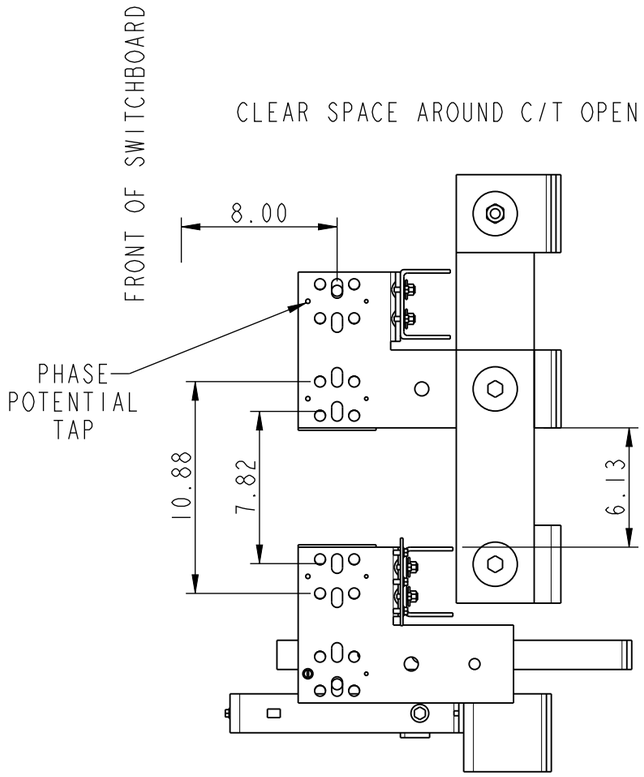


1200A
1600A

DETAIL B
NEMA SPACING



CLEAR SPACE AROUND C/T OPENING



NOTES:

1. 36" MIN SECTION WIDTHS

2. 24" MIN SECTION DEPTH

3. ALL BUS DETAILS AND SPACINGS ARE 1/4"

4. ALL BOLTS ARE 1/2" DIA

5. PT MOUNTING PROVISIONS ARE FURNISHED ON VOLTAGE SYSTEMS GREATER THAN 240V SUPPLY (2) PT MTG CHANNELS WHEN SYSTEM VOLTAGE IS GREATER THAN 240V

6. ALL PHASES AND NEUTRAL PROVIDED WITH 1/4-20 POTENTIAL TAP

7. DIMENSION TO COMPARTMENT OPENING

8. COMPARTMENT PROVIDED WITH HINGED DOOR AND SEALING HASP, 7/16 DIA HOLE, SINGLE DOOR - 36W, DOUBLE DOOR OVER 36W

9. NEUTRAL MAY BE MOUNTED ON THE LEFT OR RIGHT SIDE OF THE SECTION

10. ALL COVERS ON LINE SIDE OF UTILITY COMPARTMENT ARE SEALABLE (SEALABLE SCREWS AND WINGNUTS)

11. SIDE BARRIER REQUIRED BETWEEN ADJACENT SECTION TO ISOLATE COMPARTMENT

12. HORIZONTAL BARRIER IS VENTILATED .38 MAX DIA HOLES, HORIZONTAL BARRIER IS NOT REQUIRED ON FULL HEIGHT UTILITY COMPARTMENTS

13. CT PRIMARY BARS USED ARE 600:5 CT, MOUNT TO EITHER SIDE OF CT BUS

14. SERVICE DISCONNECT FURNISHED WITH HANDLE PADLOCK PROVISIONS

15. A GROUND LUG IS FURNISHED ON THE GROUND BUS IN THE SAME SWITCHBOARD AS THE UTILITY COMPARTMENT

ALL REVISIONS MUST BE APPROVED BY NORTHEAST UTILITIES SYSTEM

Scale: 0.125	Technical Specification: N/A NORMAL CLASS TOLERNACE	Units of measure : in
Schneider Electric	600-1600 CT COMPT NE UTILITIES *600-1600 CT COMPT NE UTILITIES*	
	Document Number: 80246-808-R1-02	Doc. Rev. 02 / Sheet: 1/1
	State: Released for Manufacturing Printed on 2017/08/18	

Original format A3

LEGEND

- STORM MANHOLE
- STORM INLET (ROUND)
- STORM INLET (RECTANGLE)
- LIGHT POLE
- ELECTRIC TRANSFORMER
- UTILITY POLE
- ELECTRIC VAULT
- GAS VALVE
- TRAFFIC SIGNAL CONTROL BOX
- TRAFFIC SIGNAL MAST
- DECIDUOUS TREE
- SHRUB
- BOLLARD
- SIGN
- STORM LINE (UNDERGROUND)
- GAS LINE (UNDERGROUND)
- ELECTRIC LINE (UNDERGROUND)
- TELEPHONE LINE (UNDERGROUND)
- CONCRETE AREA
- ASPHALT AREA

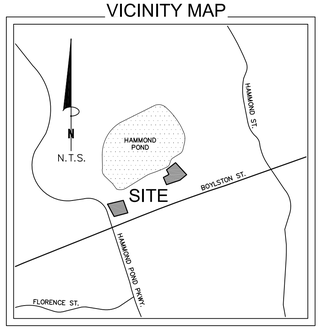
N

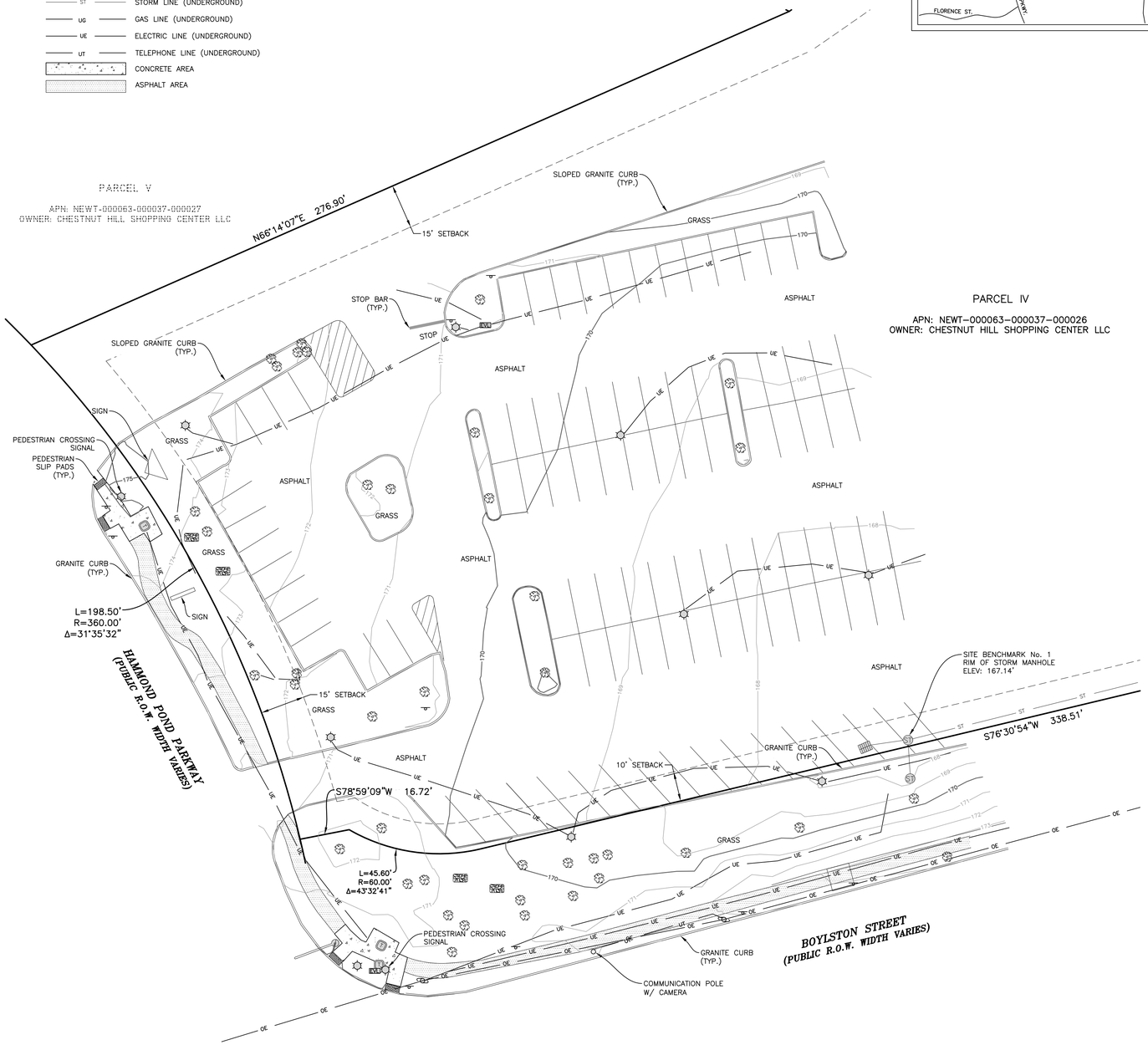
GRAPHIC SCALE

20 0 10 20

(IN FEET)
1 inch = 20 ft.

VICINITY MAP





PARCEL IV

APN: NEWT-000063-000037-000026
OWNER: CHESTNUT HILL SHOPPING CENTER LLC

PROPERTY DESCRIPTION:

Parcel I and Parcel IV as described in the Quitclaim Deed recorded on January 23, 2014, in Book 63205 Page 127 in the Office of Middlesex South Registry of Deeds, County of Middlesex, State of Massachusetts.

SCHEDULE B2 EXCEPTIONS:

Report No. RC1840895 & RC1840846

Item No.

1. QUITCLAIM DEED January 23, 2014 BOOK 63205 PAGE 127
   –AFFECTS SURVEY AREA, BLANKET IN NATURE.
2. EASEMENT May 11, 1971 BOOK 11995 PAGE 259
   –MAY AFFECT SURVEY AREA, INSUFFICIENT MATHEMATICAL DATA TO LOCATE.
3. EASEMENT FOR ELECTRIC SERVICE August 20, 2009 BOOK 53415 PAGE 586
   –AFFECTS PARENT PARCEL, DOES NOT AFFECT SURVEY AREA.
4. MATTERS AND EASEMENTS AS SHOWN ON THE FILED MAP September 10, 1999 BOOK 30967 PAGE 205
   –DOES NOT AFFECT SURVEY AREA.

Items not listed above are determined non–survey related items and are not plotted hereon.

NOTES:

1. This is a topographic map. This is not a boundary survey and is only intended to depict those topographic features or improvements shown. The property lines shown are record lines only and are shown for graphical reference only.
2. Any underground utilities shown have been located from field survey information. The surveyor makes no guarantee that the underground utilities shown comprise all such utilities in the area, either in service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although he does certify that they are located as accurately as possible from the information available.
3. FEDERAL EMERGENCY MANAGEMENT AGENCY, Flood Insurance Rate Map, Map Number 25017C0558E effective date June 4, 2010, indicates this parcel of land is located in Zone X (Areas of 0.2% annual chance flood plain).
4. This survey does not constitute a title search by Clark Land Surveying, Inc. to determine ownership or easements of record. For all information regarding easements, rights of way and title of record, Clark Land Surveying, Inc. relied upon a Search Report, prepared by First Corporate Solutions with an order number of RC1840895 & RC1840846, dated July 14, 2017.
5. Elevations are based on NAVD 88 datum.
6. BENCHMARK No. 1: Rim of Storm Manhole, as shown. Elevation: 167.14' (NAVD 88).
   BENCHMARK No. 2: Rim of Storm Manhole, as shown. Elevation: 170.10' (NAVD 88)
7. BASIS OF BEARINGS: Bearings are relative to the Massachusetts State Plane Coordinate System (Mainland) (NAD83).
8. Field work for this survey was completed on July 13, 2017.
9. This site is zoned "BU4" (Business 4) per City of Newton Planning Department.
   Building Setbacks:
   Front: 10'
   Side: Greater of 1/2 Building Height or 15'
   Rear: 1/2 of Building Height or 15'

SURVEYOR'S STATEMENT:

On the basis of my knowledge, information and belief, I hereby state and declare that this drawing was prepared under my direct supervision to the standard of care of surveyors practicing in the State of Massachusetts and that the information shown hereon is true and correct to the best of my knowledge and belief.

This statement is neither a warranty nor a guarantee, either expressed or implied.

COMMONWEALTH OF MASSACHUSETTS
PHILIP B CHENEY
No. 36375
REGISTERED LAND SURVEYOR

Philip B. Cheney
Massachusetts Professional Land Surveyor No. 36375
For and on behalf of Clark Land Surveying, Inc.

Clark Land Surveying & ALTA Mapping
177 S. Tiffany Dr., Unit 1 • Pueblo West, CO 81007 • 719.582.1270
www.clarkls.com

Revisions			
No.	Description	By	Date

SITE NAME:
MA011 Chestnut Hill

TOPOGRAPHIC SURVEY

A PORTION OF PARCEL I & PARCEL IV AS RECORDED IN BOOK 63205 PAGE 127 IN THE MIDDLESEX SOUTH REGISTRY OF DEEDS COUNTY OF MIDDLESEX, STATE OF MASSACHUSETTS

Project No. 170490

Drawn By: NSB
Checked By: PBC

Date: 07/26/2017
Sheet 1 of 2

LEGEND

(ST)	STORM MANHOLE
	STORM INLET (ROUND)
	STORM INLET (RECTANGLE)
	LIGHT POLE
	ELECTRIC TRANSFORMER
	UTILITY POLE
EVL	ELECTRIC VAULT
	GAS VALVE
(T)	TRAFFIC SIGNAL CONTROL BOX
	TRAFFIC SIGNAL MAST
	DECIDUOUS TREE
	SHRUB
	BOLLARD
	SIGN
ST	STORM LINE (UNDERGROUND)
UG	GAS LINE (UNDERGROUND)
UE	ELECTRIC LINE (UNDERGROUND)
UT	TELEPHONE LINE (UNDERGROUND)
	CONCRETE AREA
	ASPHALT AREA

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